

FIG. 1

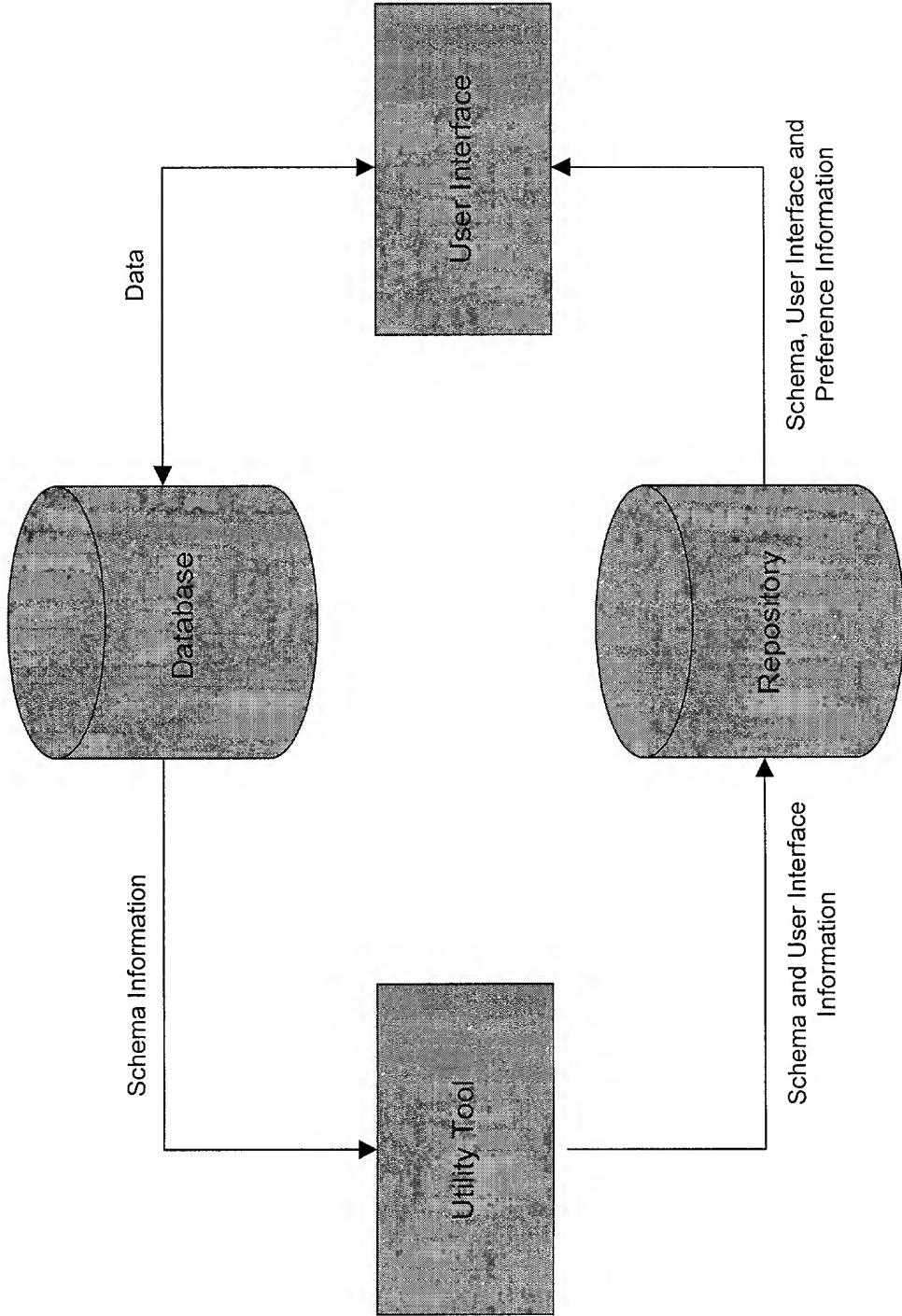


FIG. 2

Relational Database Normalization

The First 4 Normal Forms

1st Normal Form

Practical Rule: Eliminate Repeating Groups: Make a separate table for each set of related attributes, and give each table a primary key.

Formal Definition: A relation is in first normal form (1NF) if and only if all underlying simple domains contain atomic values only.

2nd Normal Form

Practical Rule: Eliminate Redundant Data: If an attribute depends on only part of a multi-valued key, remove it to a separate table.

Formal Definition: A relation is in second normal form (2NF) if and only if it is in 1NF and every non-key attribute is fully dependent on the primary key.

3rd Normal Form

Practical Rule: Eliminate Fields Not Dependent On Key: If attributes do not contribute to a description of a key, remove them to a separate table.

Formal Definition: A relation is in third normal form (3NF) if and only if it is in 2NF and every non-key attribute is non-transitively dependent on the primary key.

4th Normal Form

Practical Rule: Isolate Independent Multiple Relationships: No table may contain two or more one-to-many or many-to-many relationships that are not directly related.

Formal Definition: A relation R is in fourth normal form (4NF) if and only if, whenever there exists a multi-valued dependency in the R, say B depends on A, then all attributes of R are also functionally dependent on A.

FIG. 3

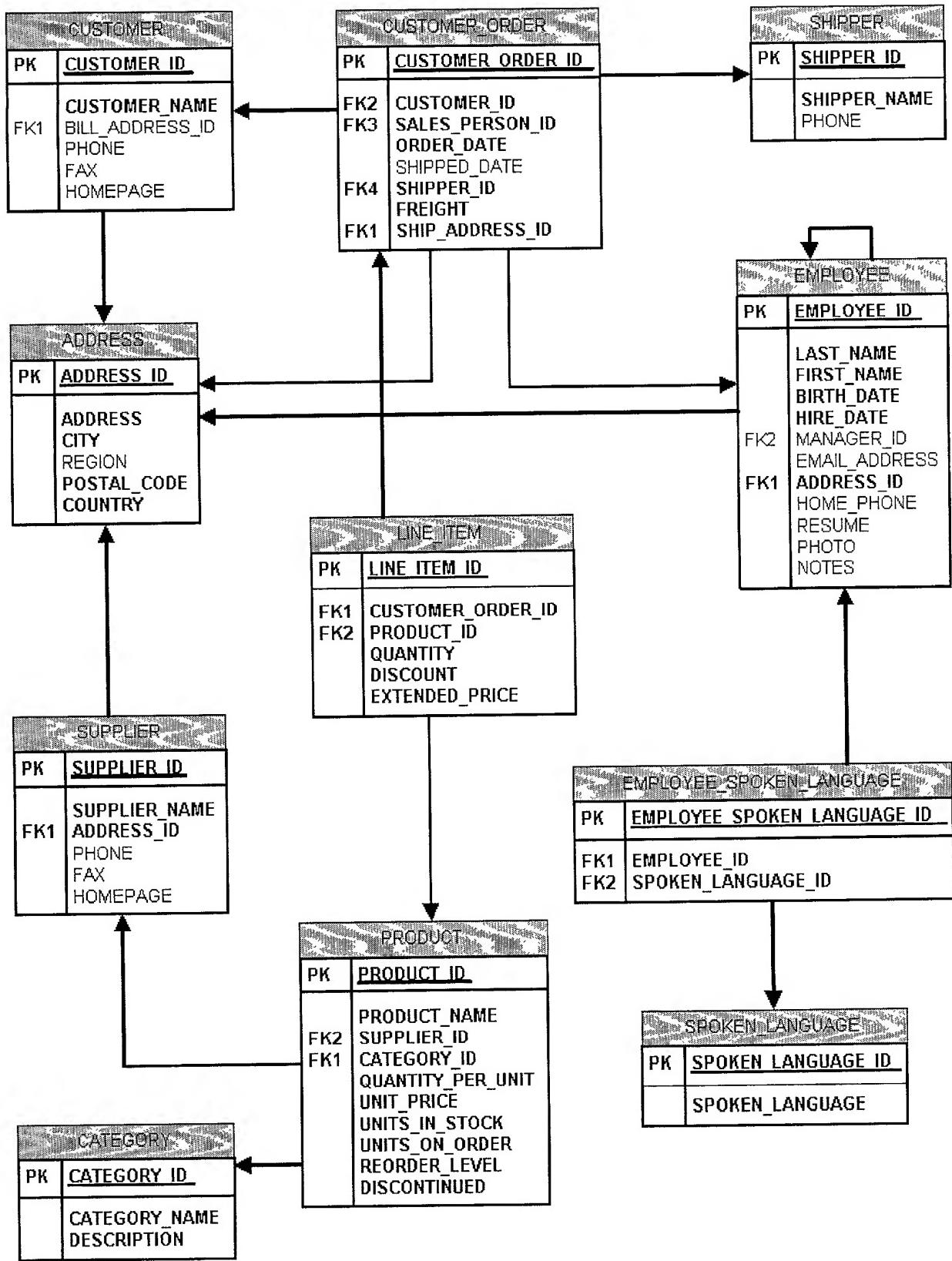


FIG. 4

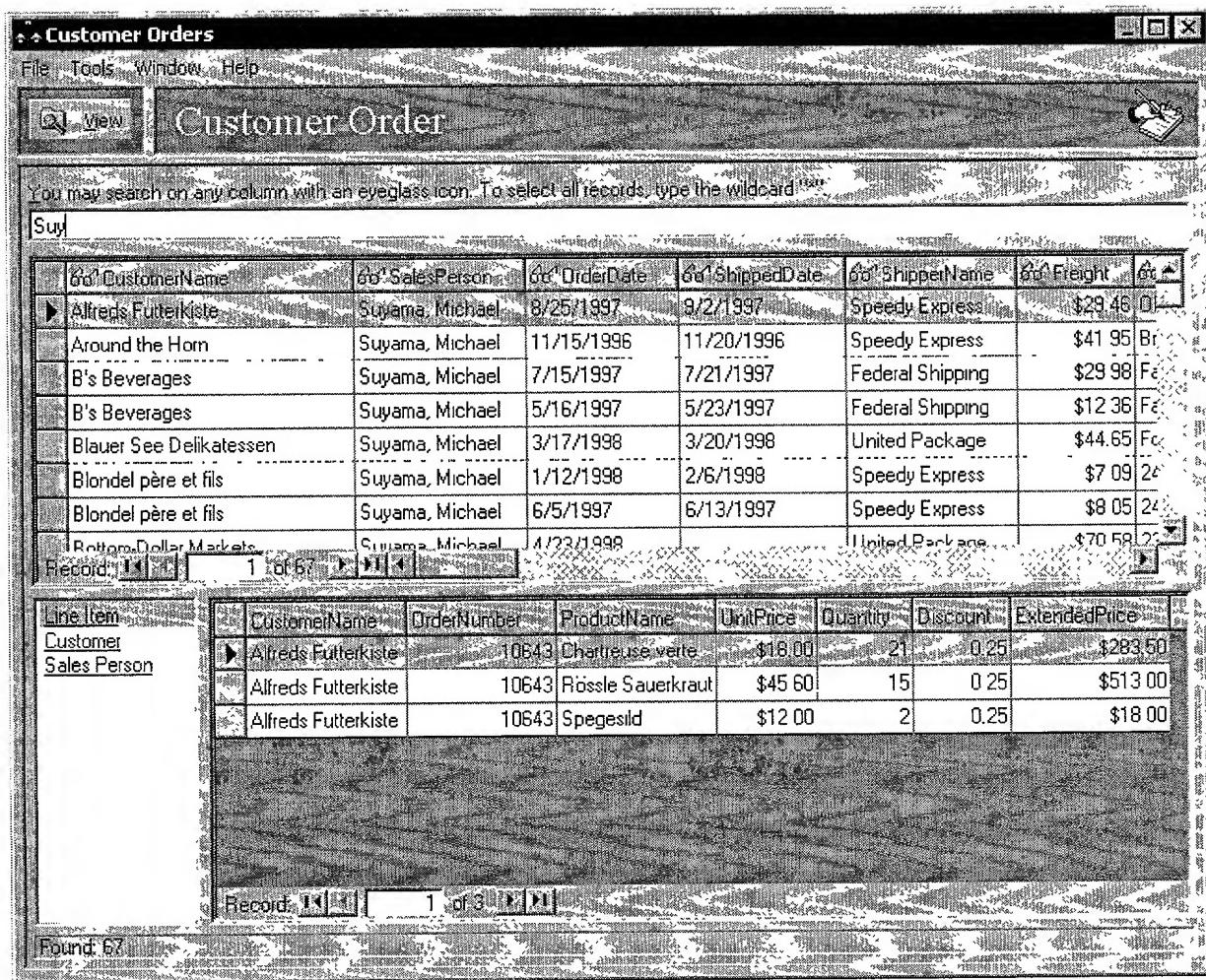
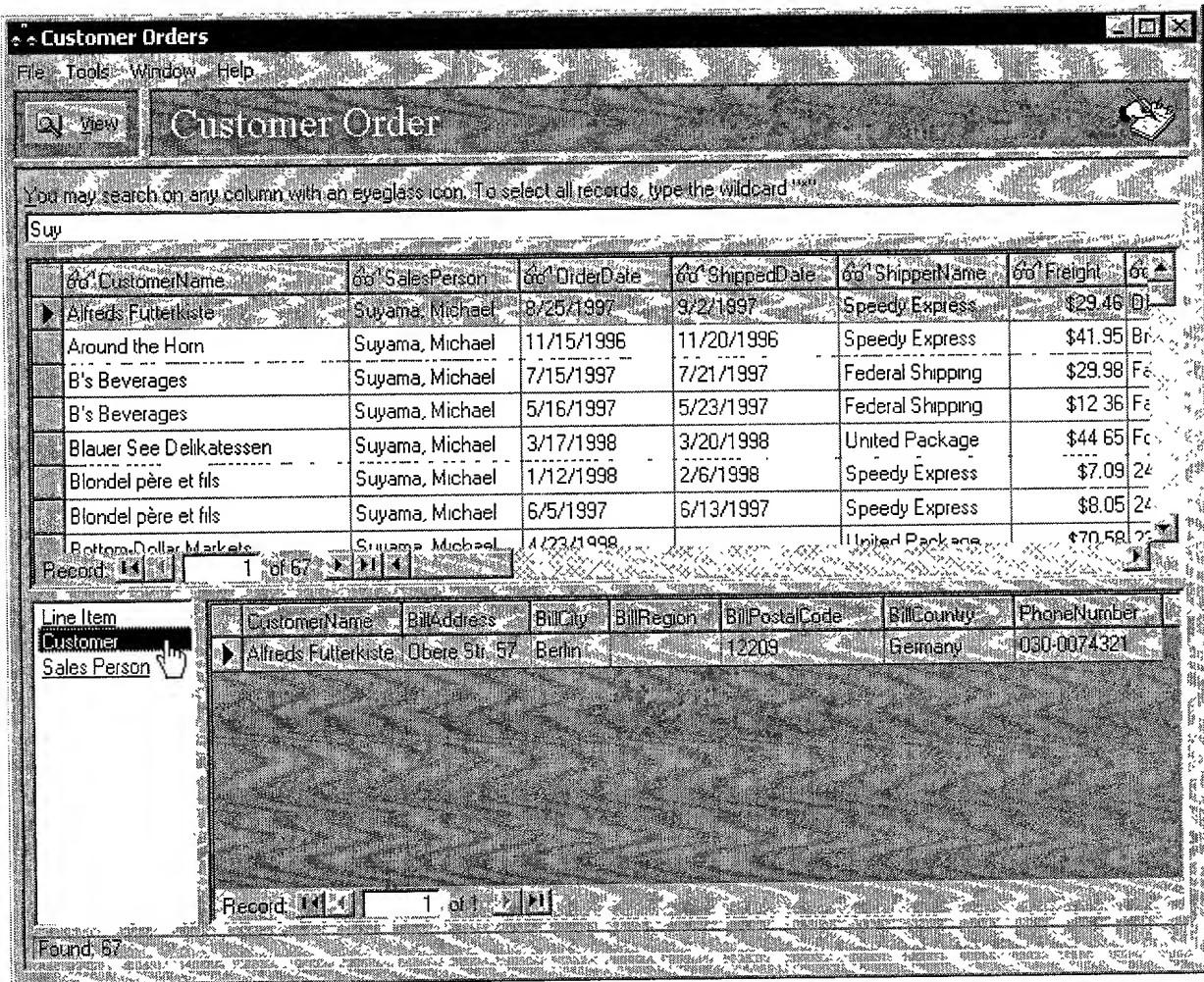


FIG. 5



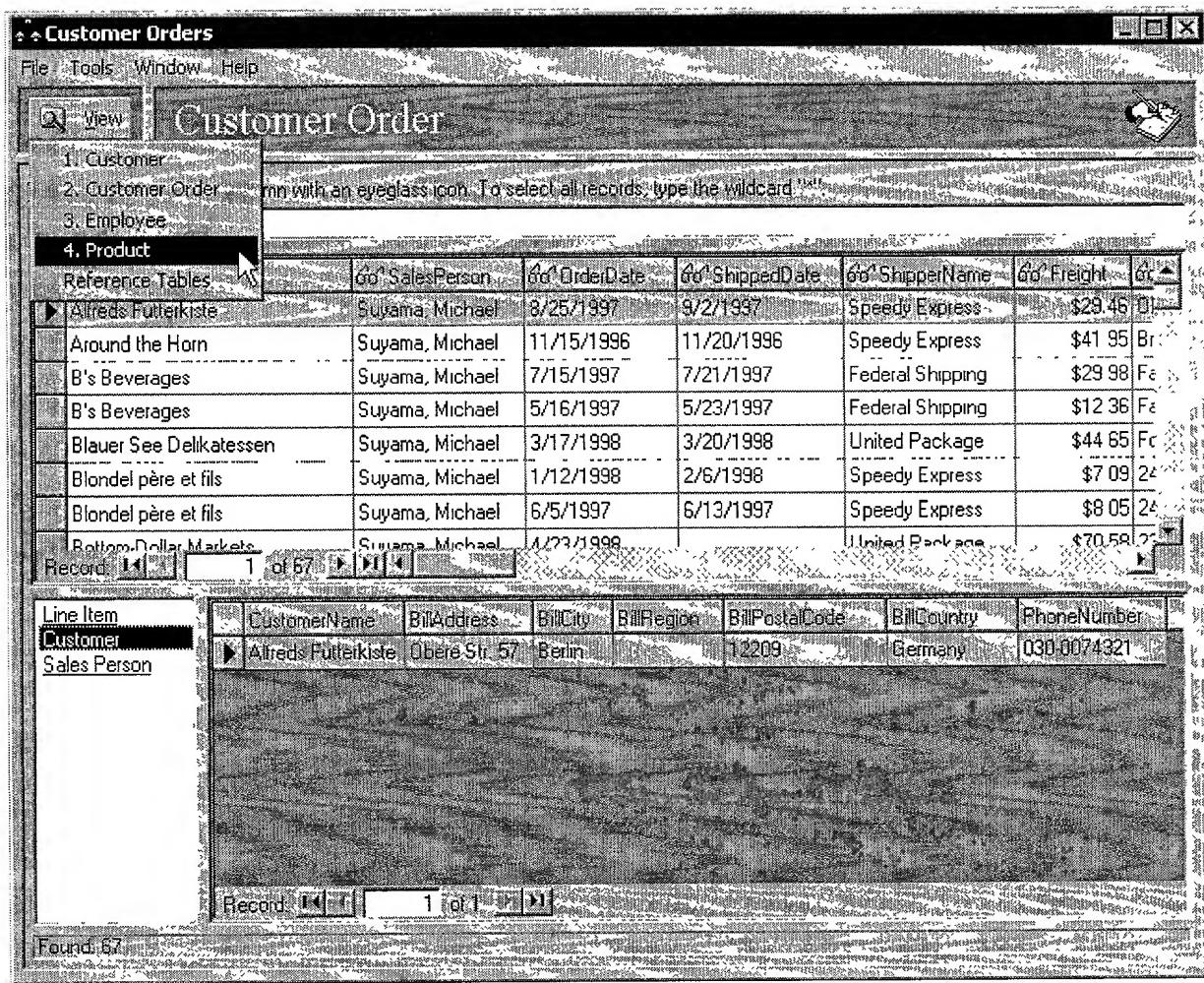


FIG. 7

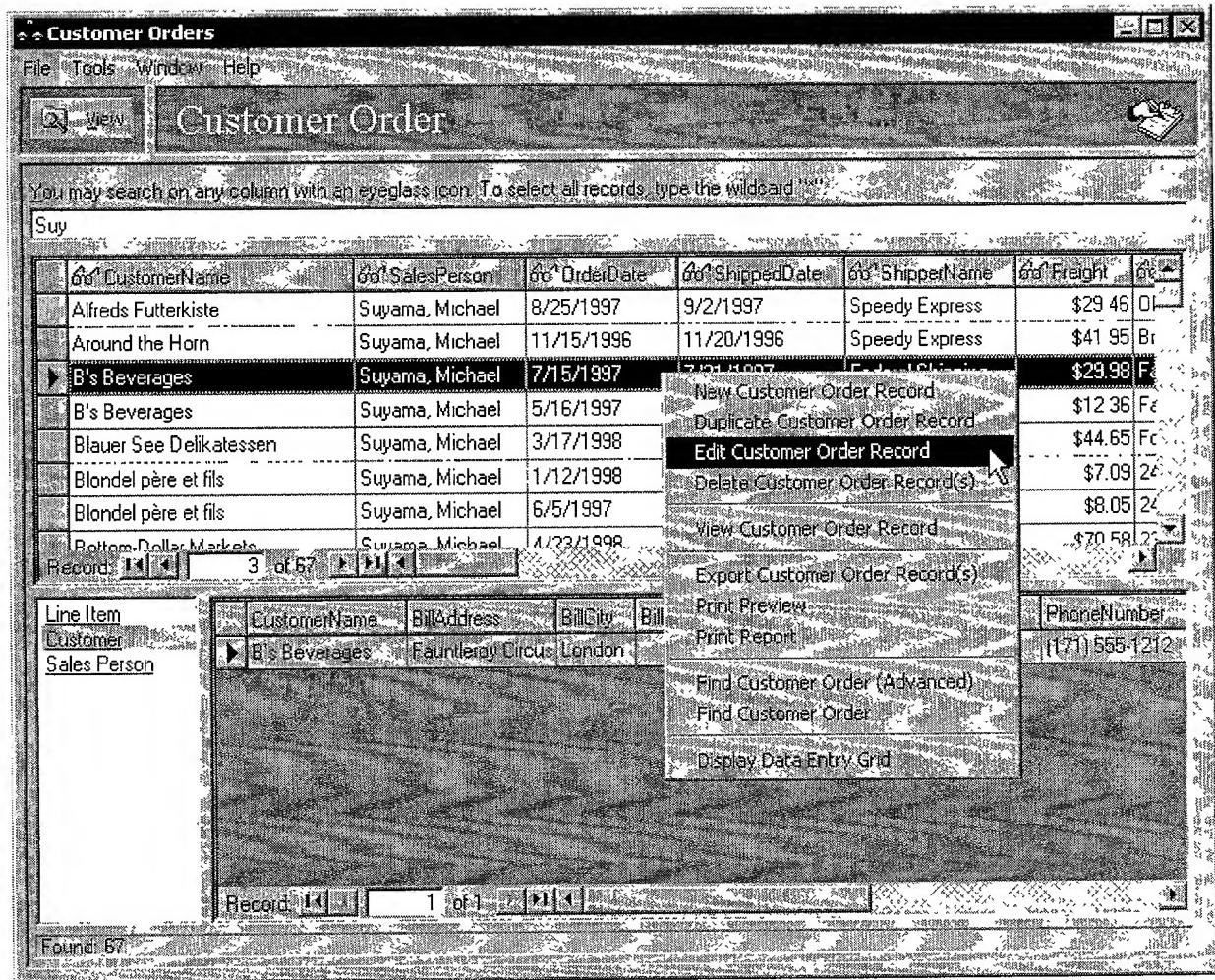


FIG. 8

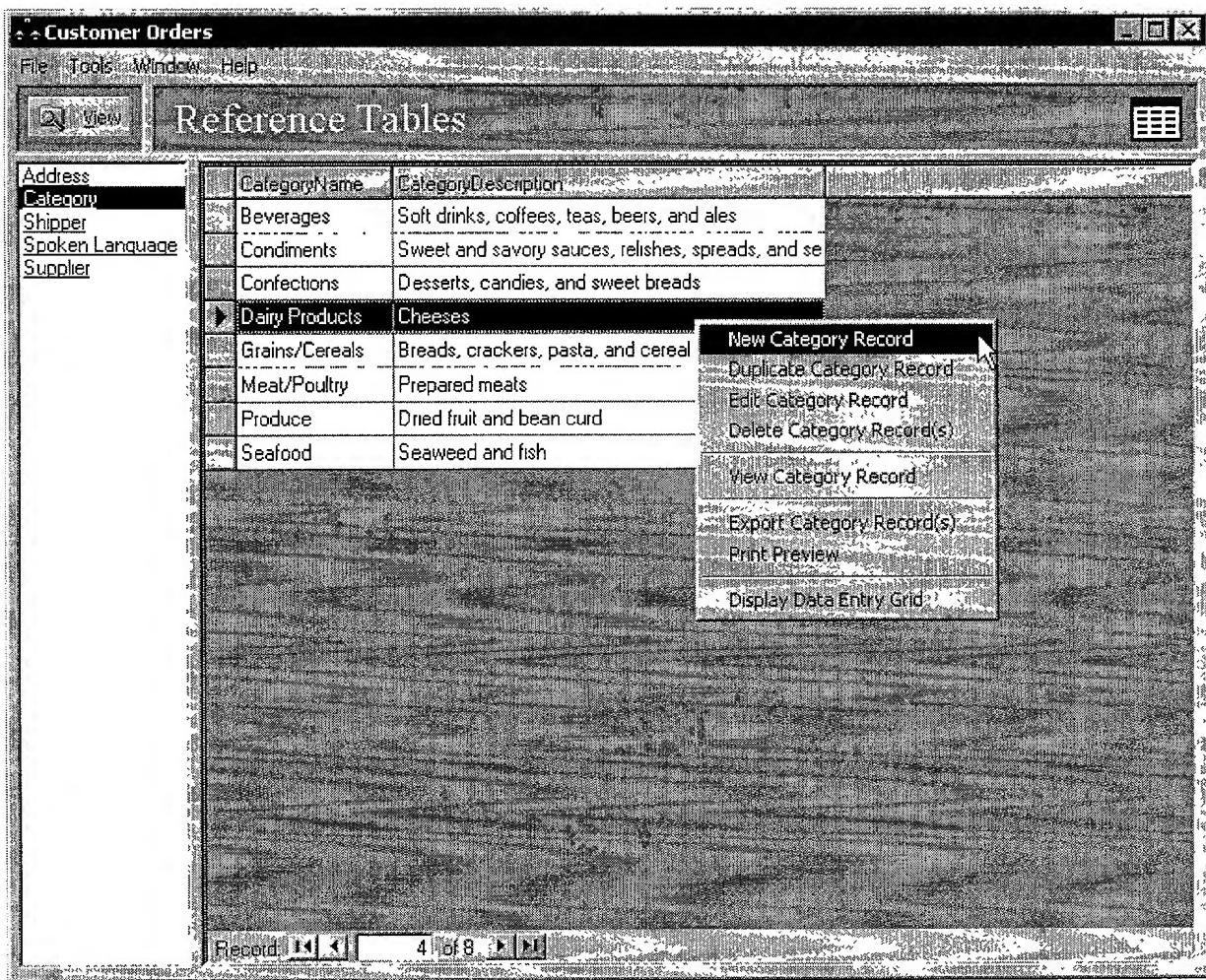


FIG. 9

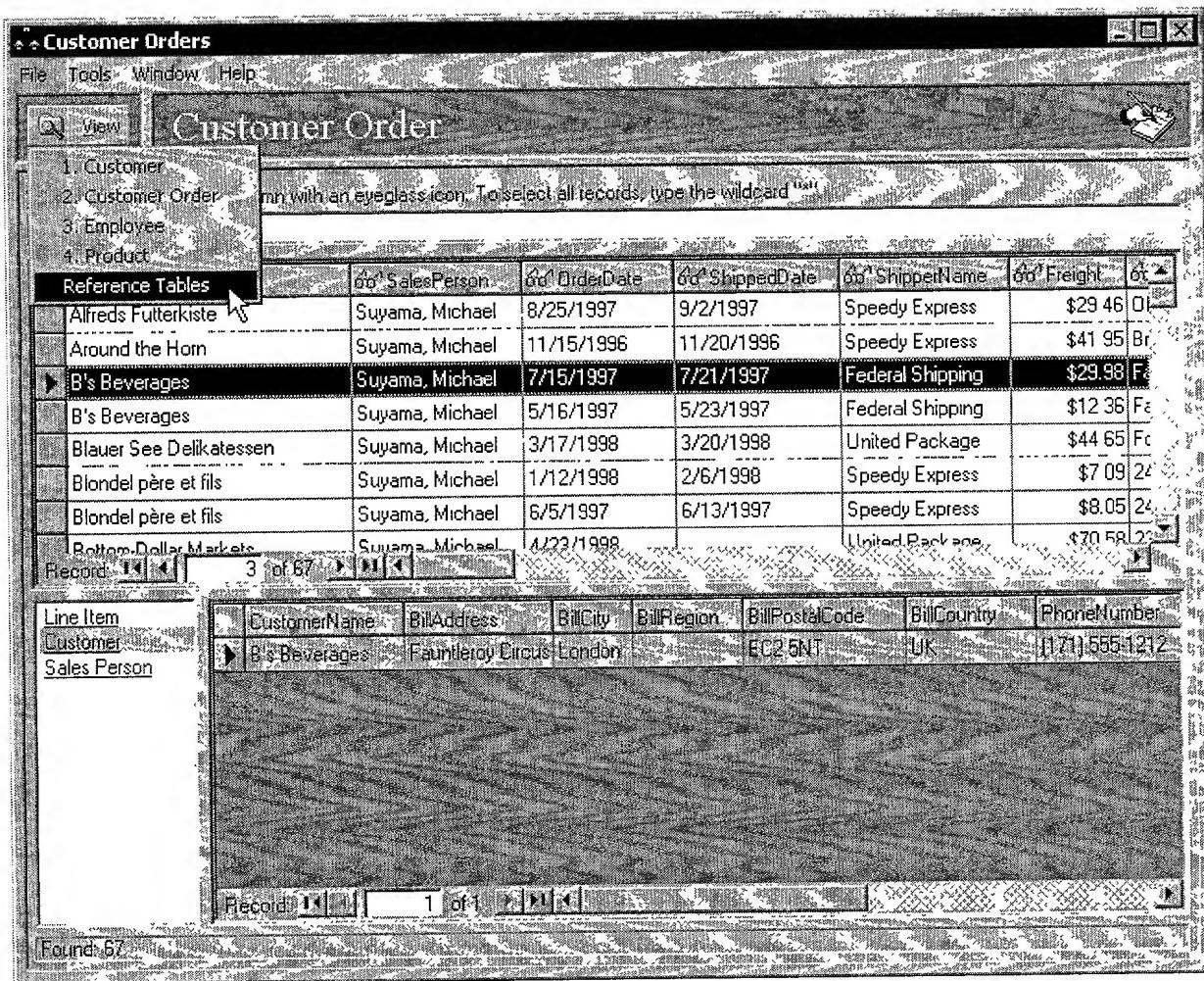


FIG. 10

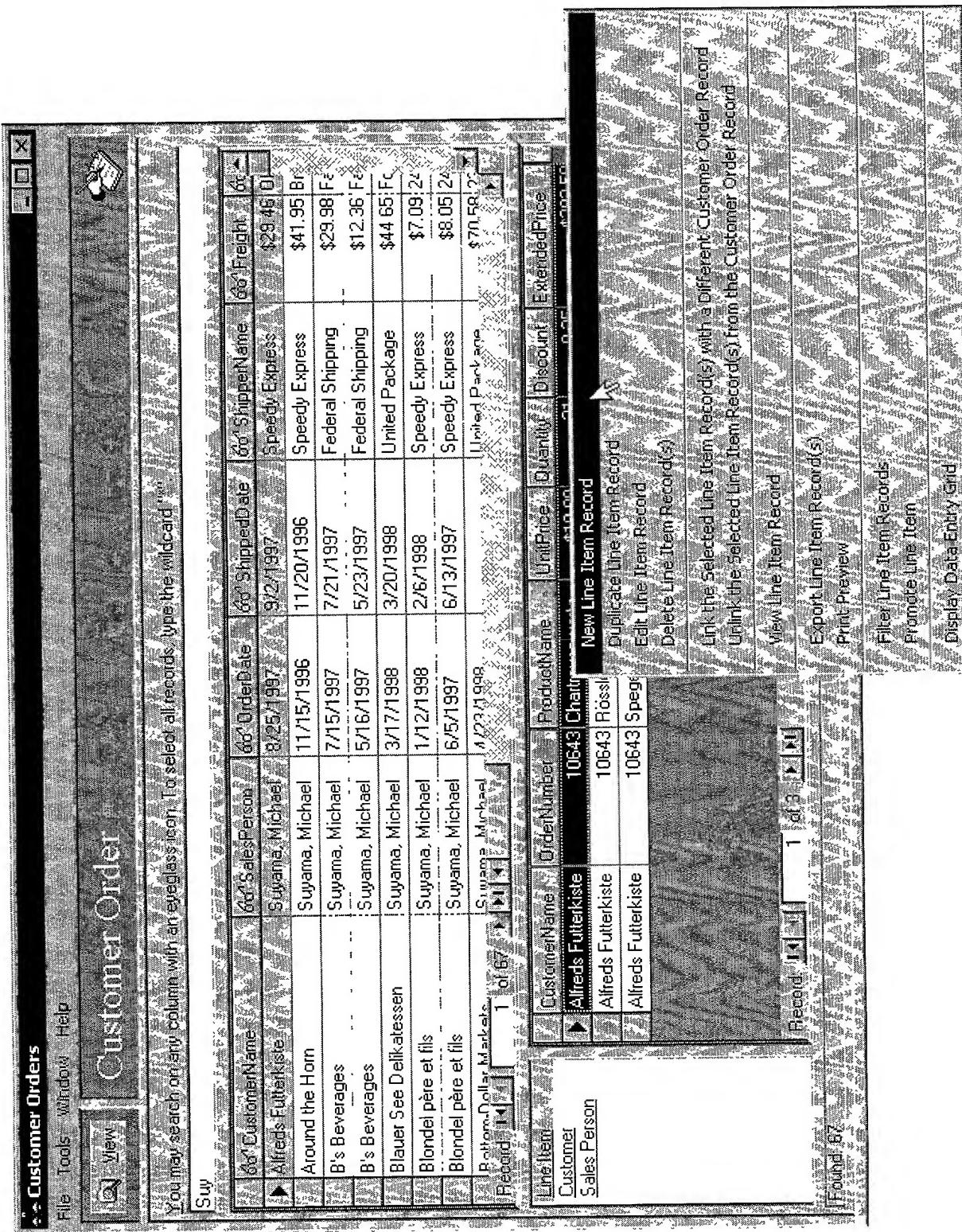


FIG. 11

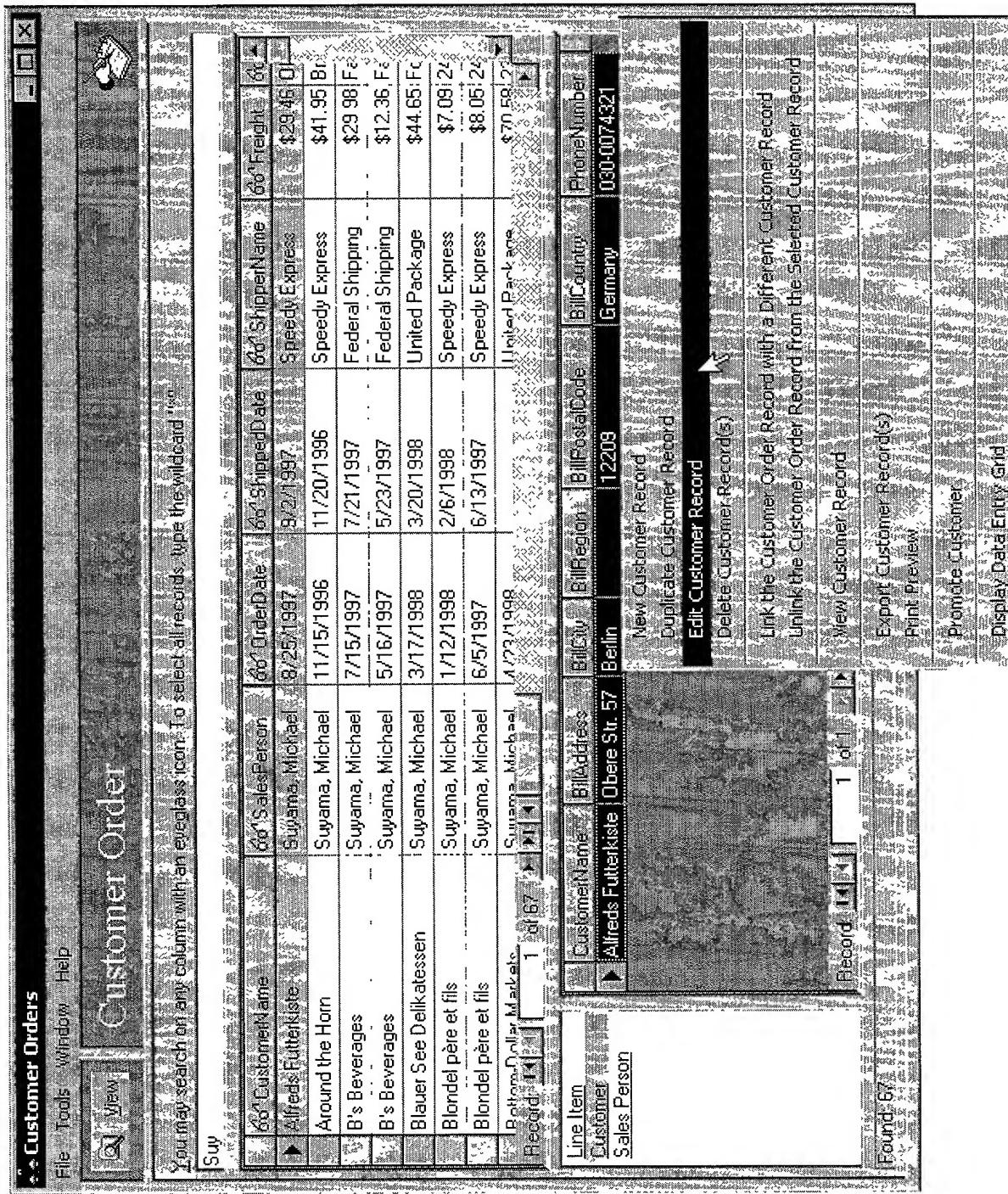
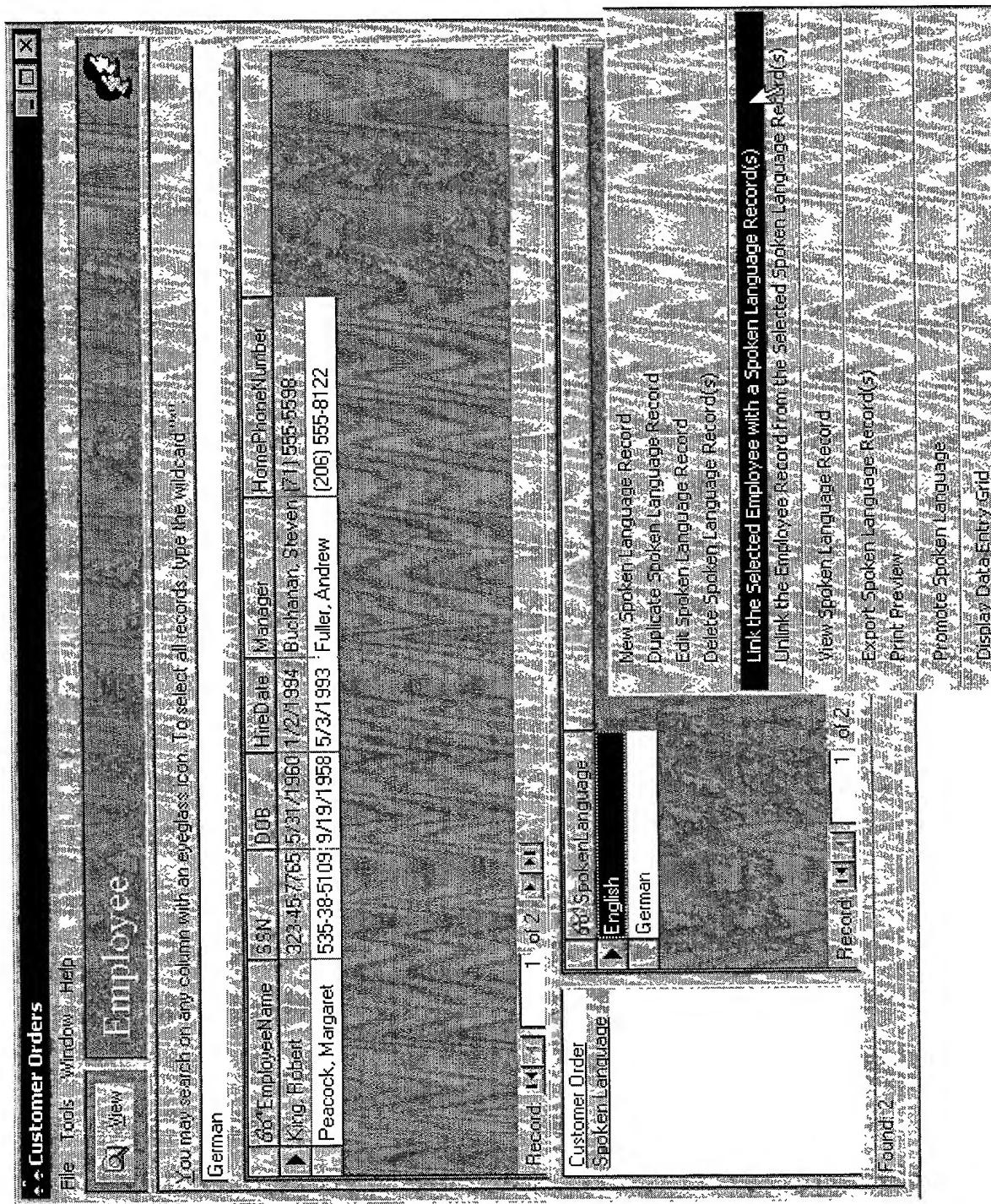


FIG. 12

FIG. 13



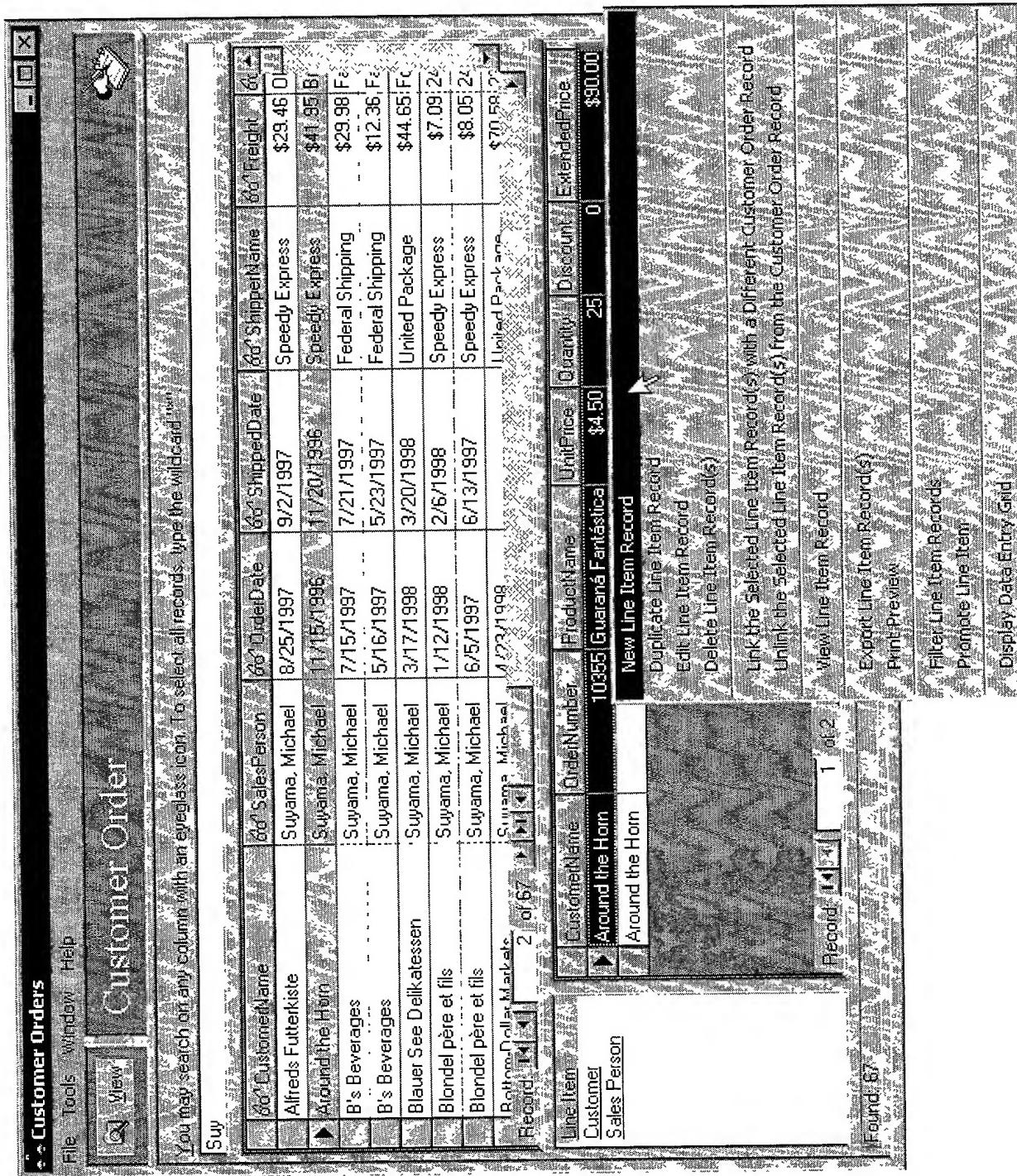


FIG. 14

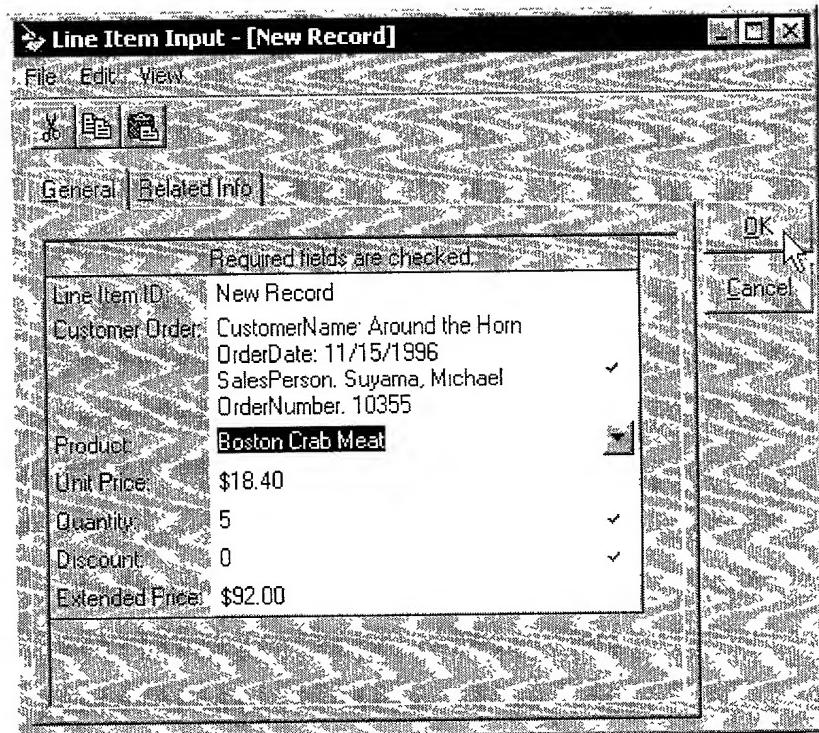


FIG. 15

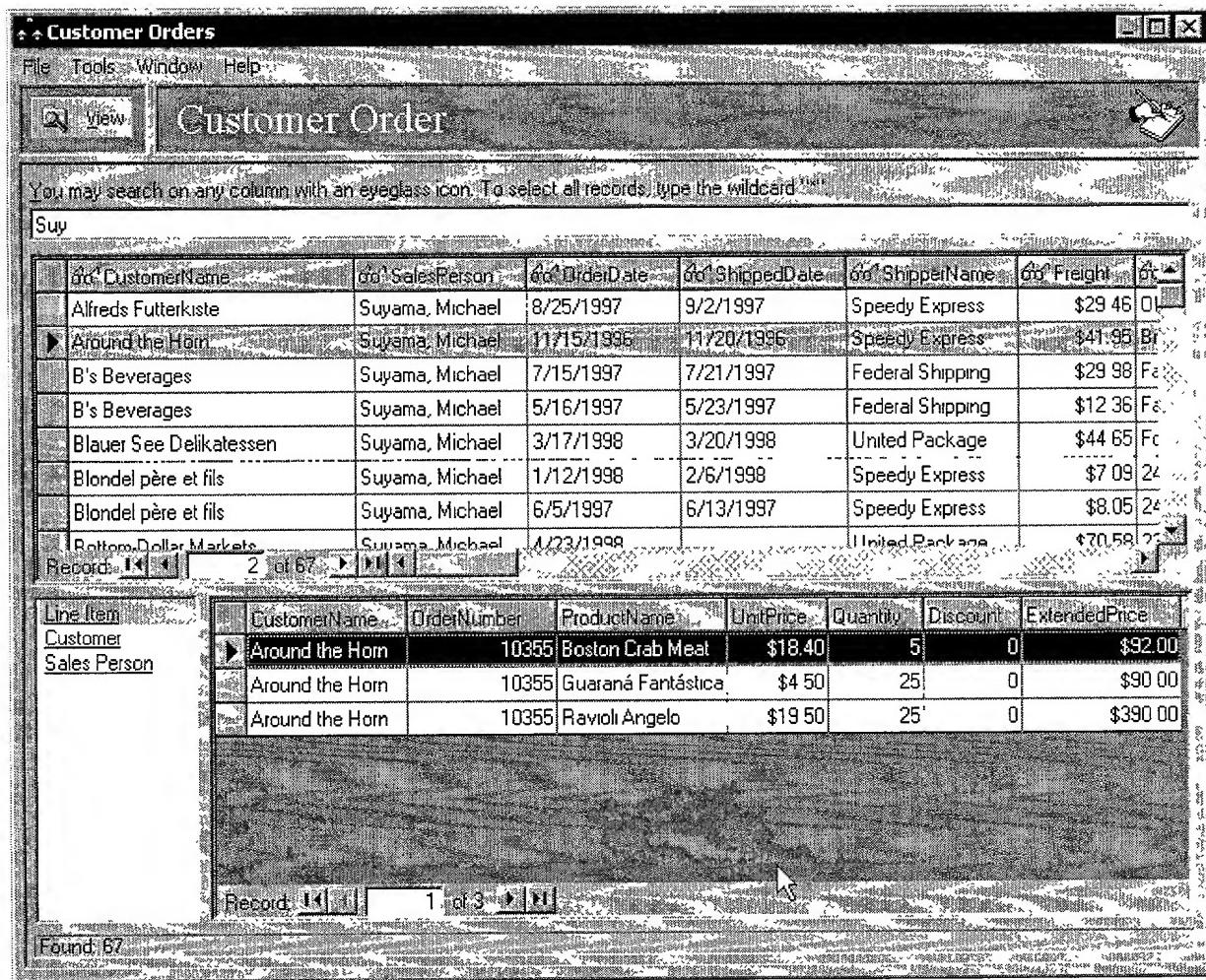


FIG. 16

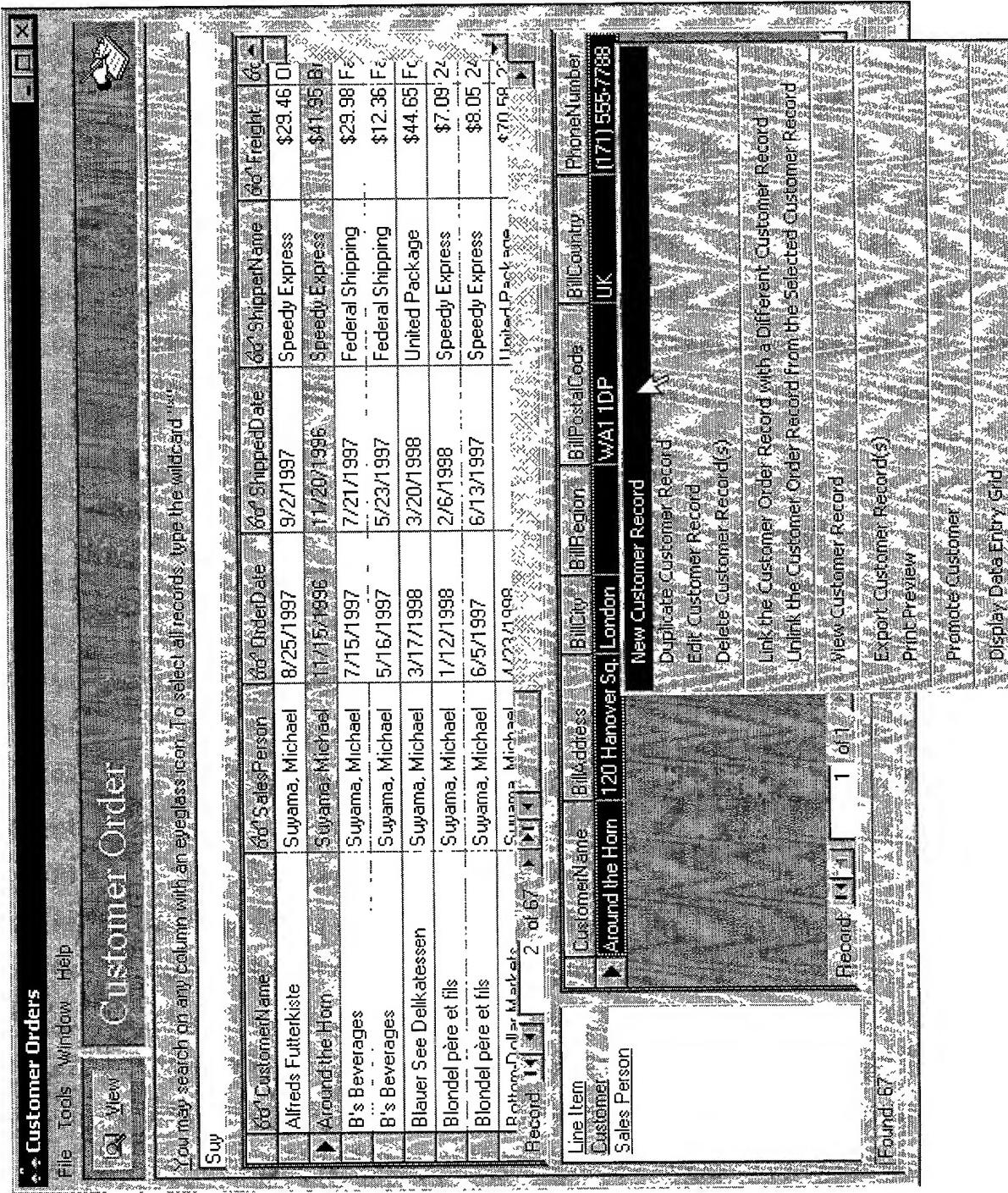


FIG. 17

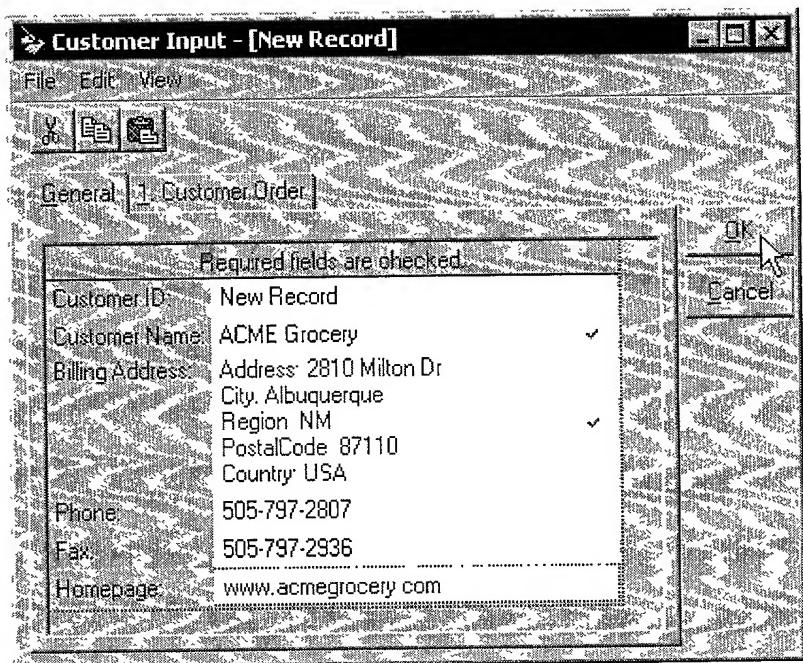


FIG. 18

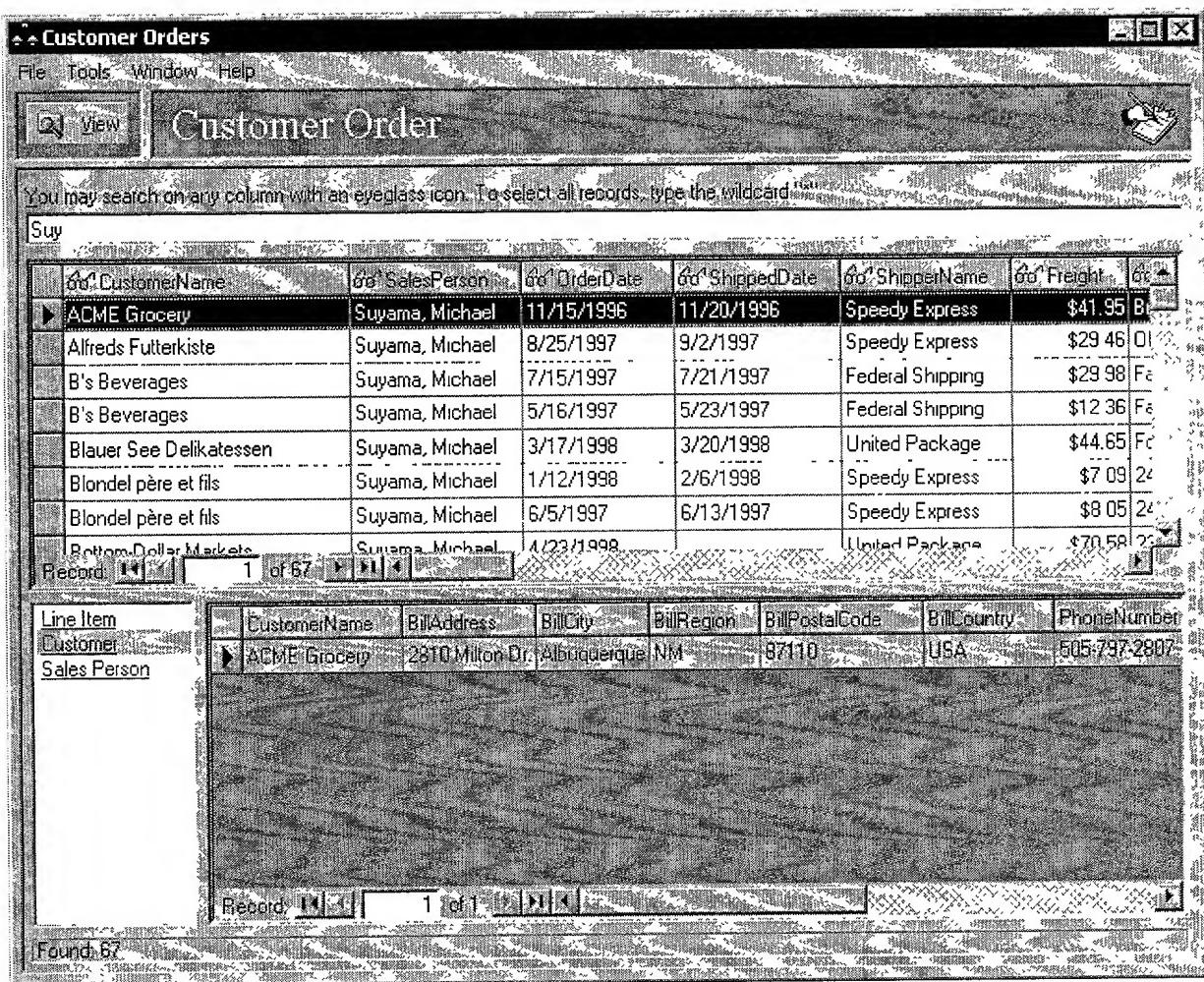


FIG. 19

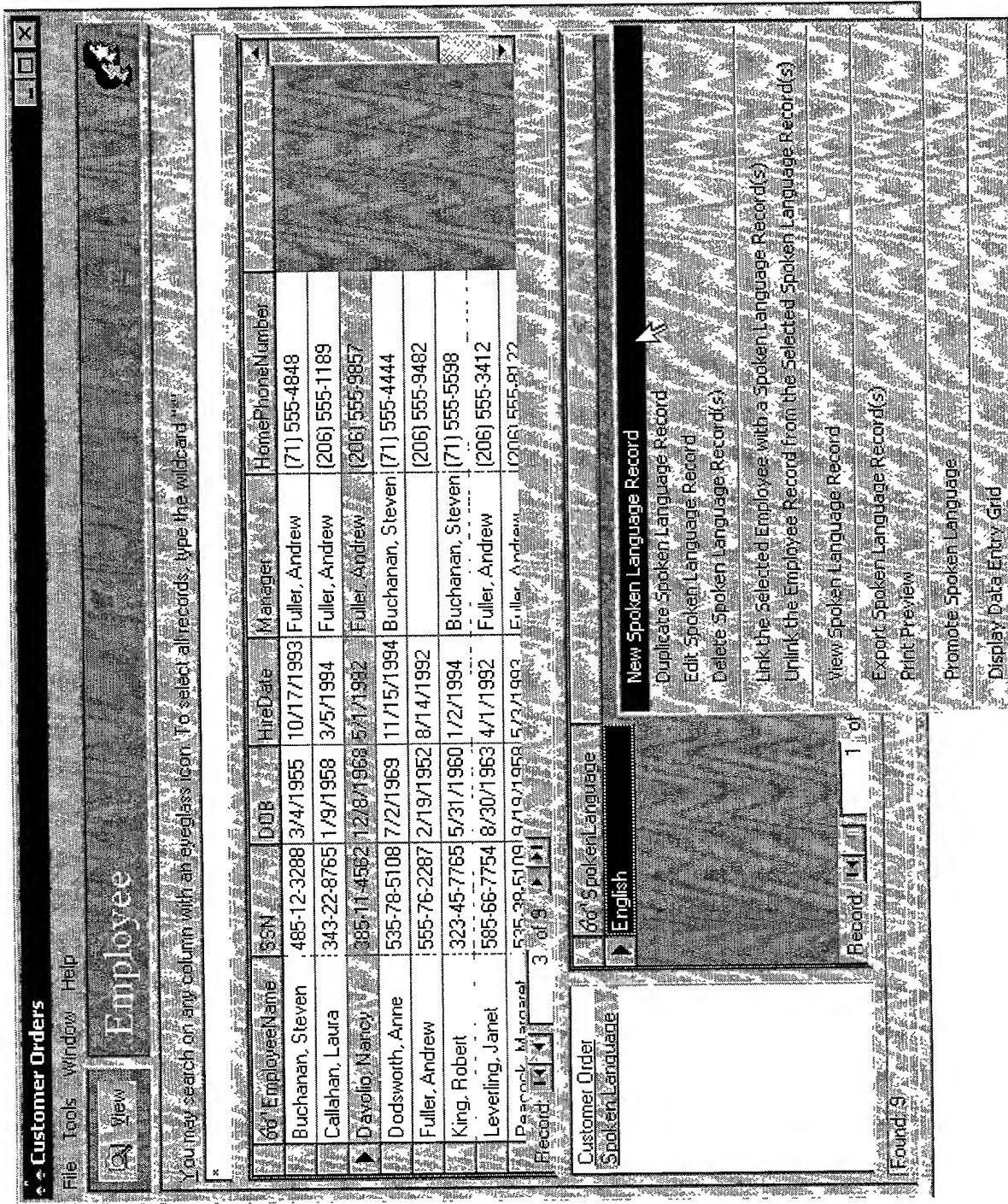


FIG. 20

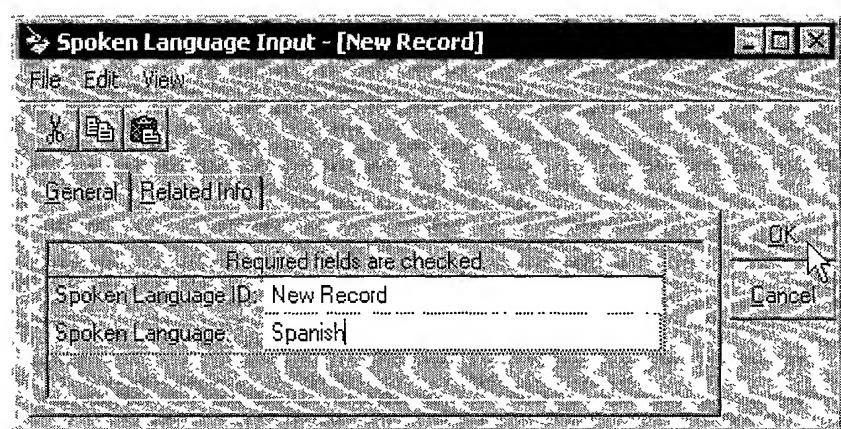


FIG. 21

10040851 122804

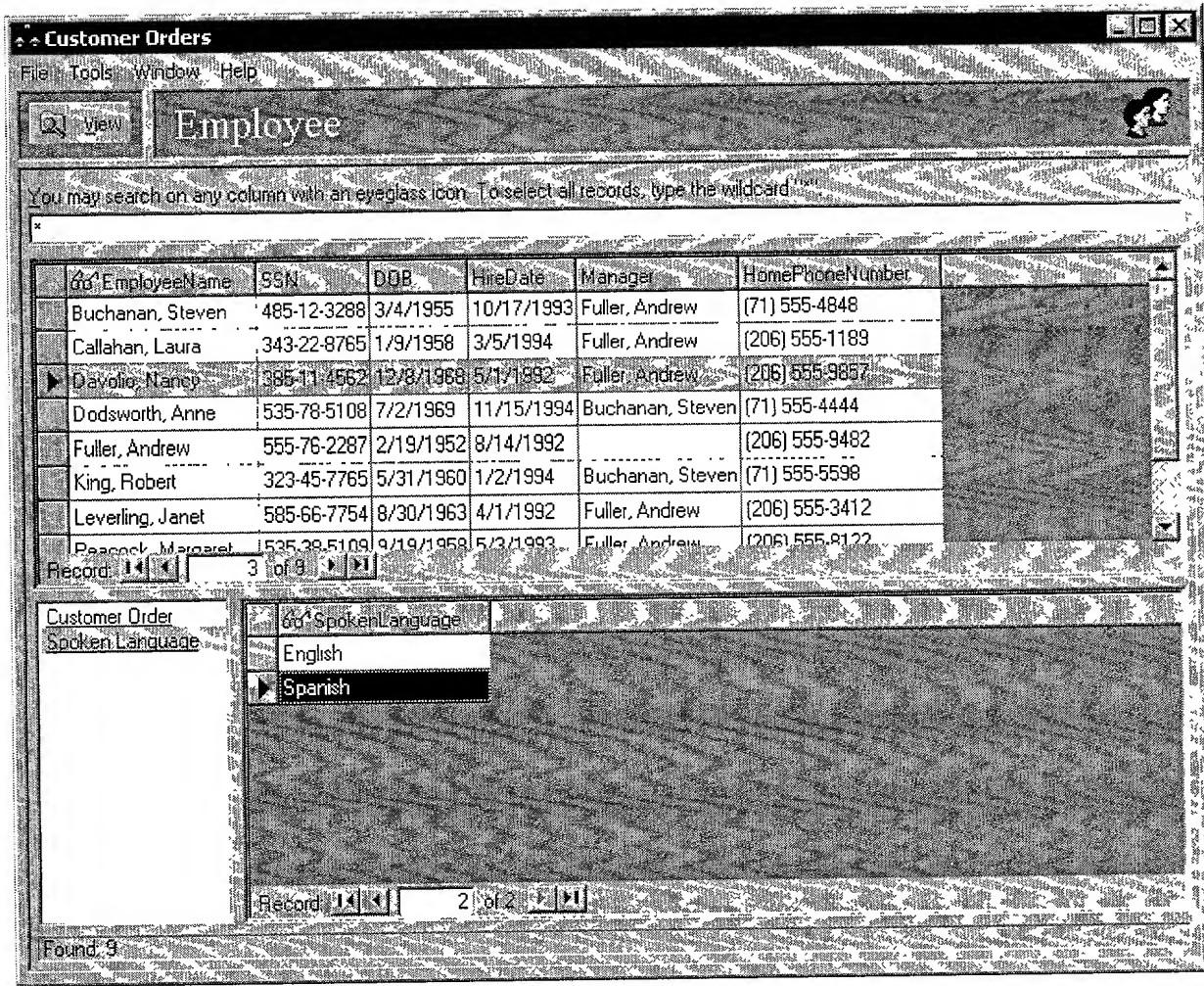


FIG. 22

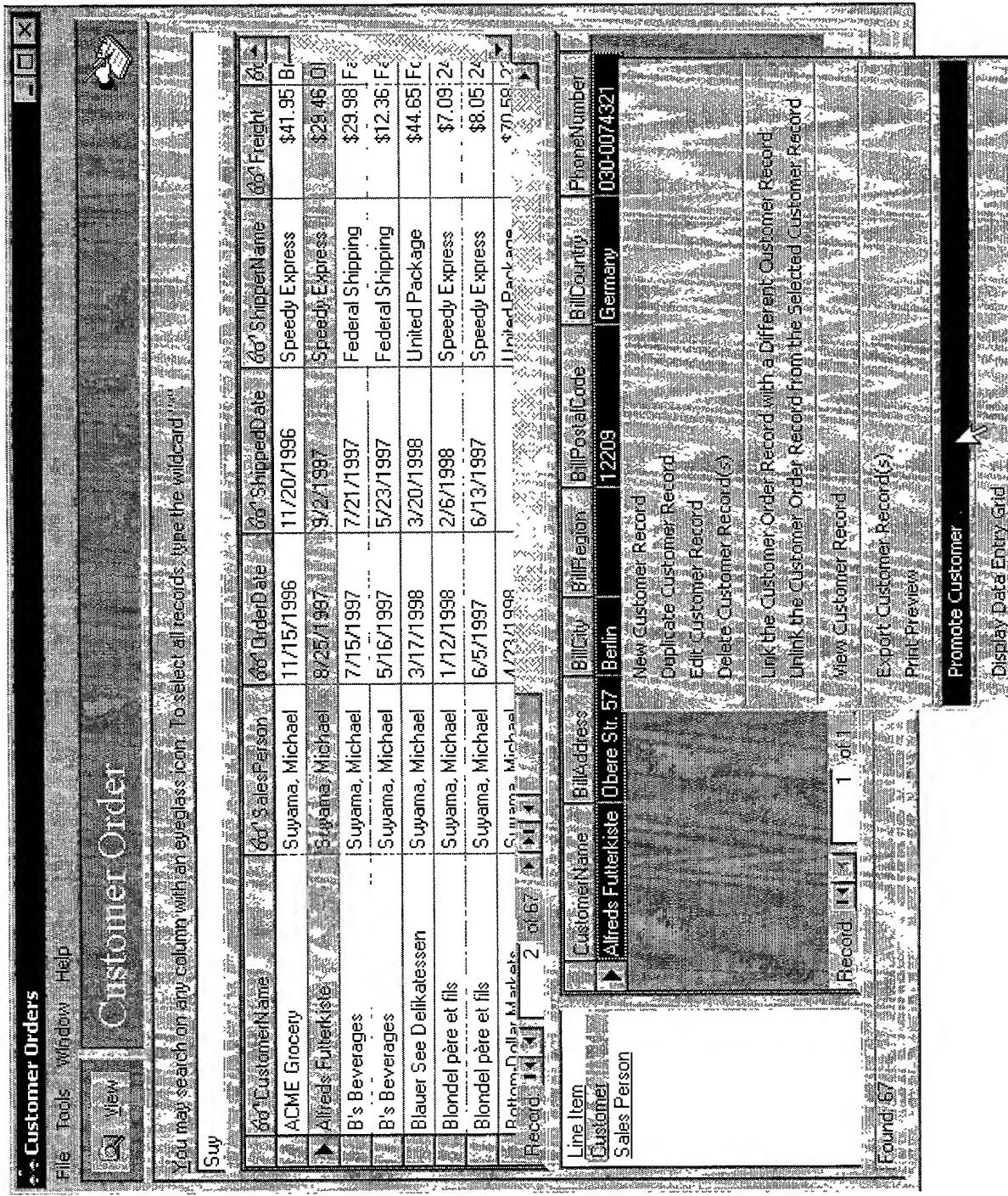


FIG. 23

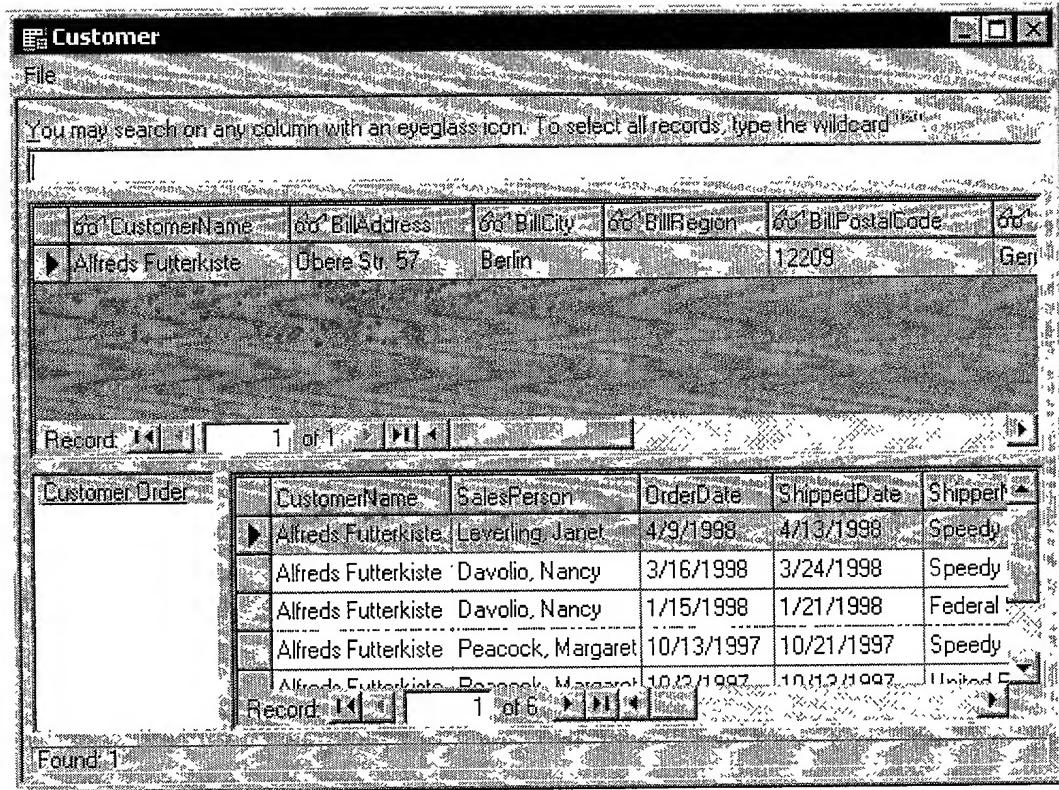


FIG. 24

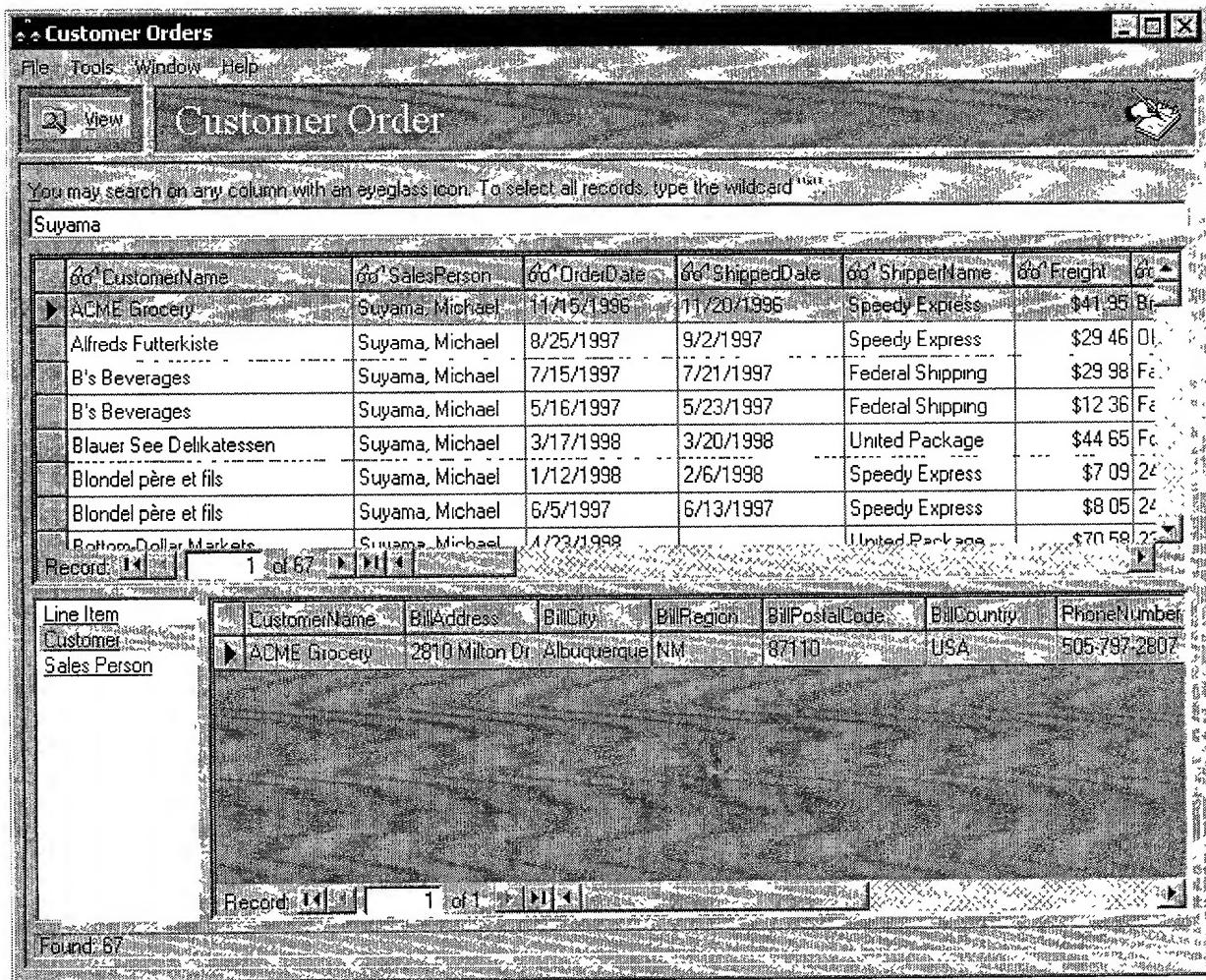


FIG. 25

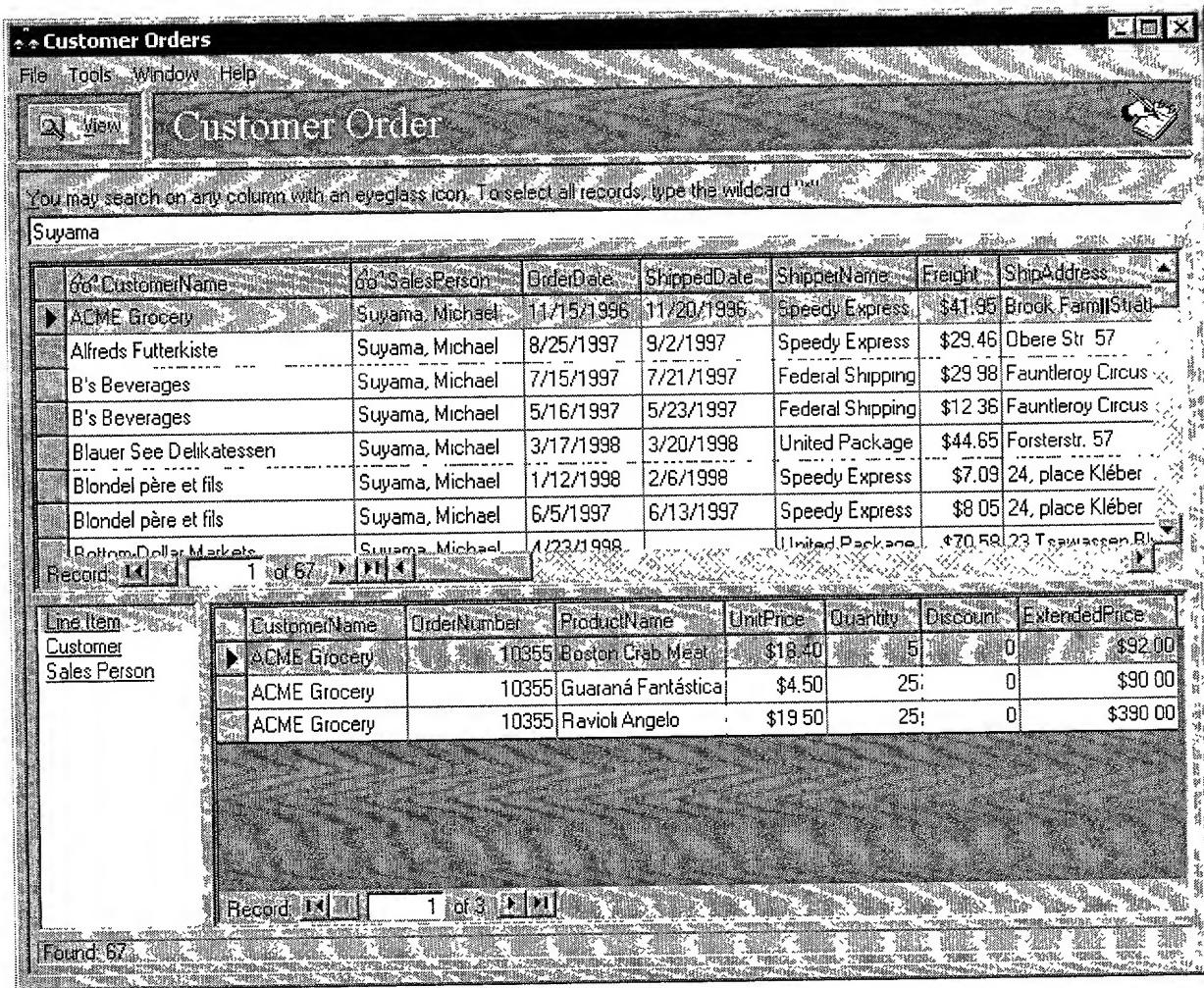


FIG. 26

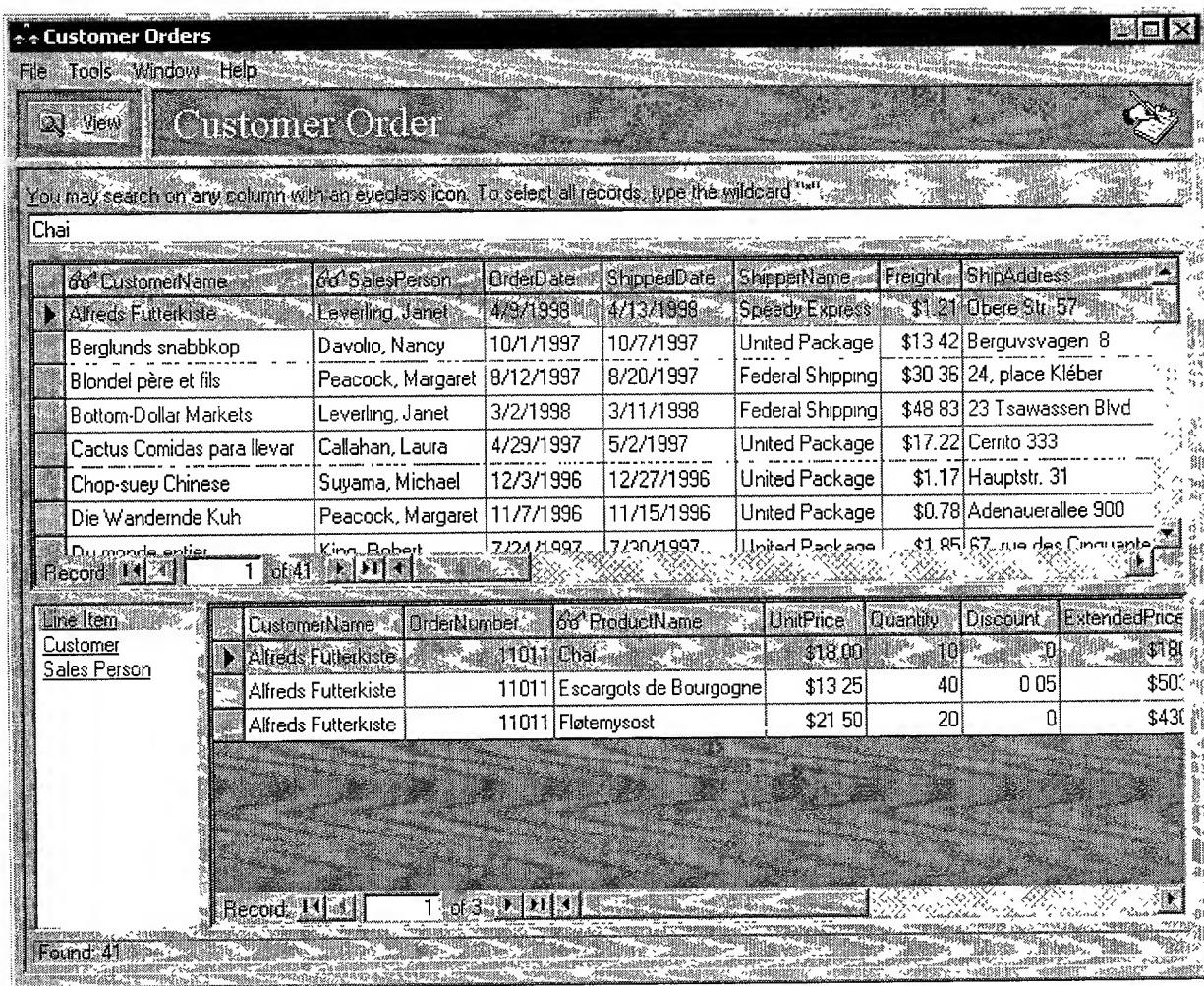


FIG. 27

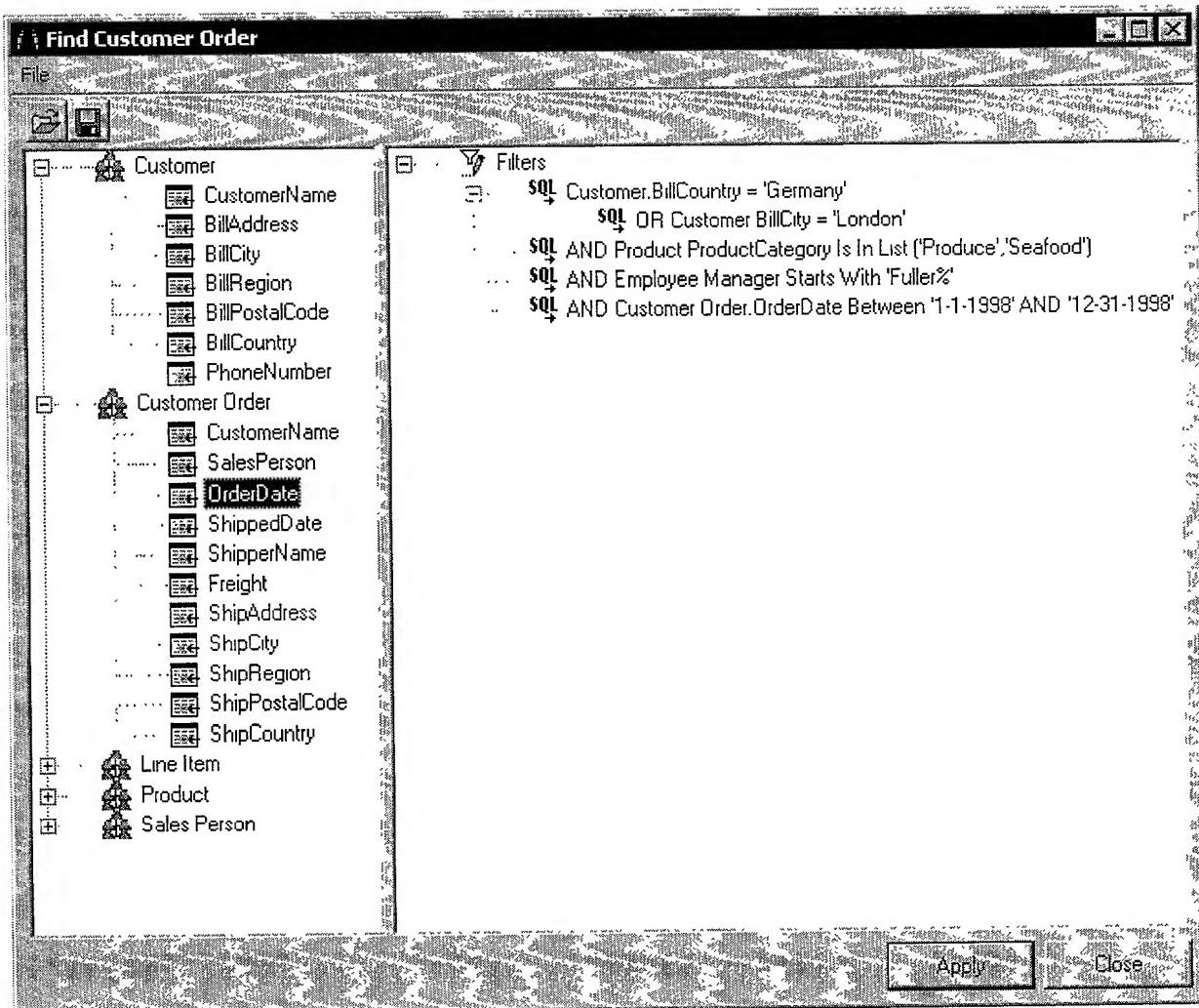


FIG. 28

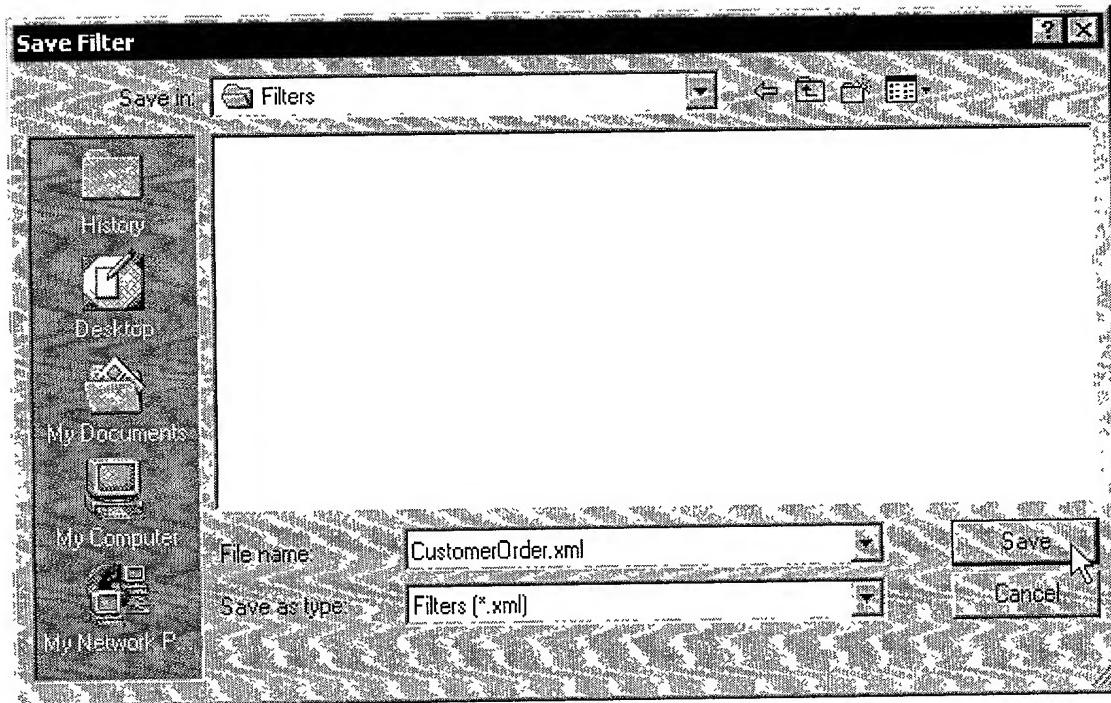


FIG. 29

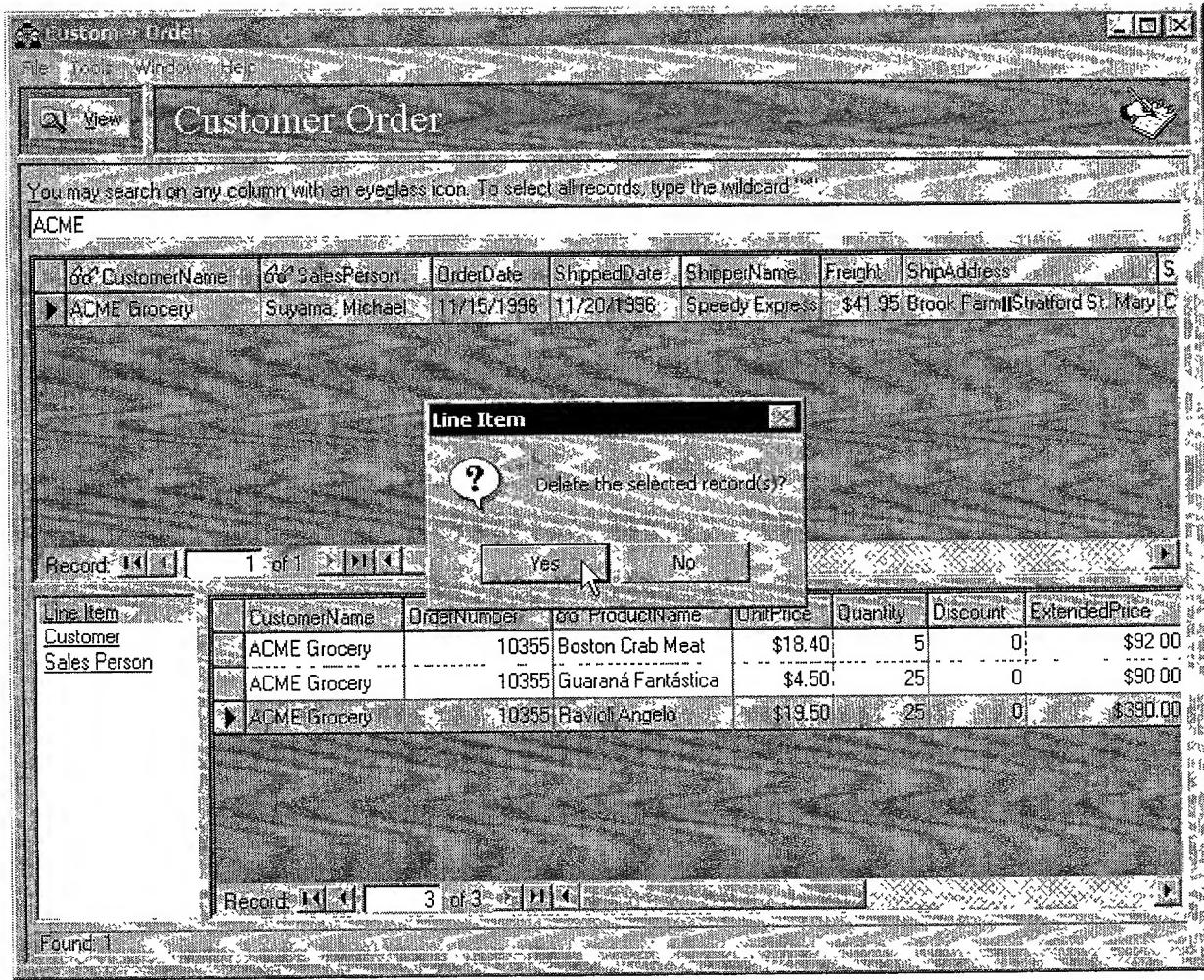


FIG. 30

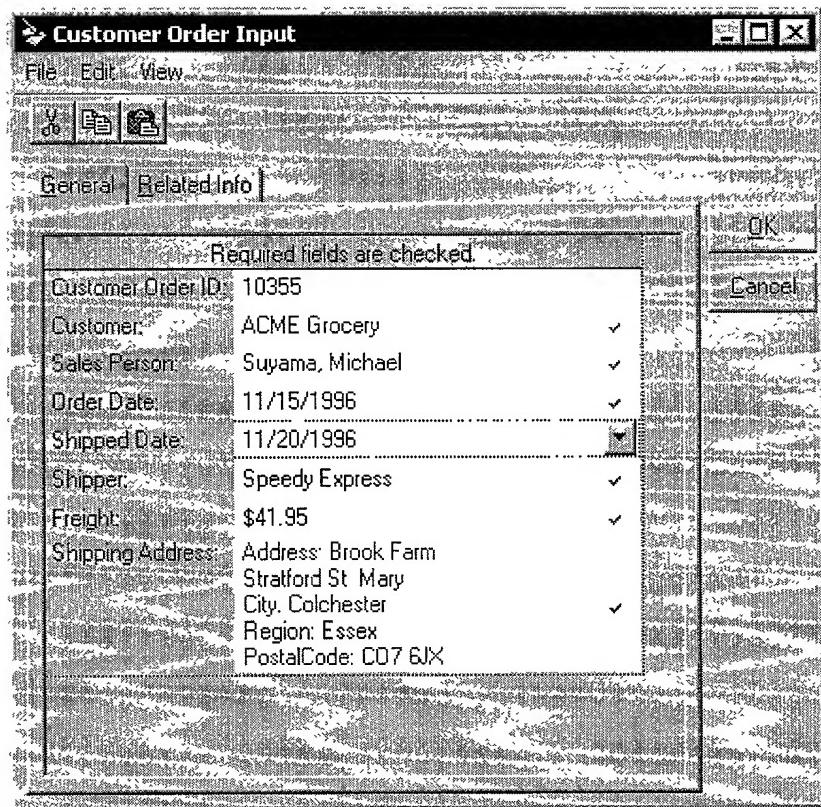


FIG. 31

Data Entry Control Decision Flowchart

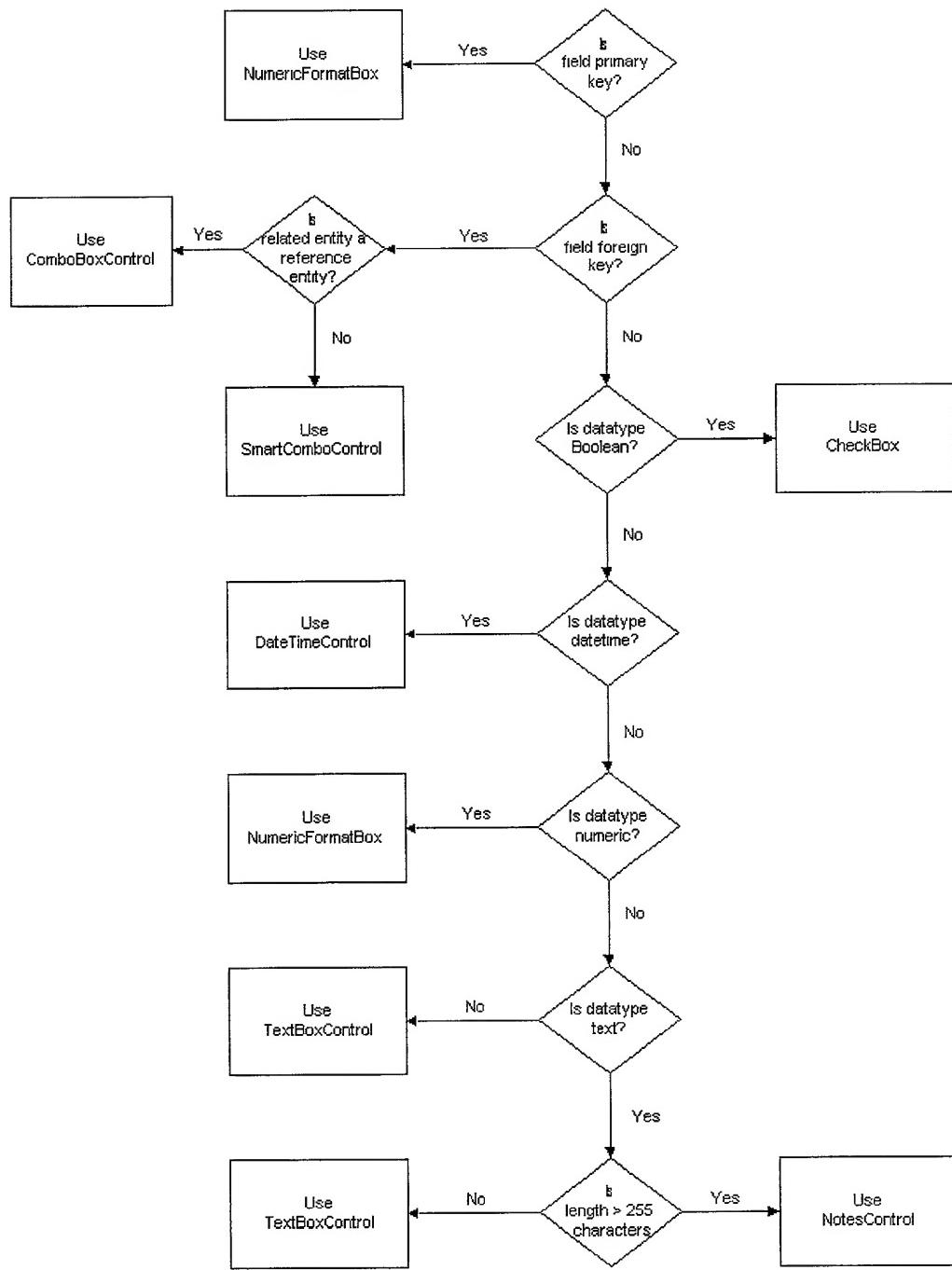


FIG. 32

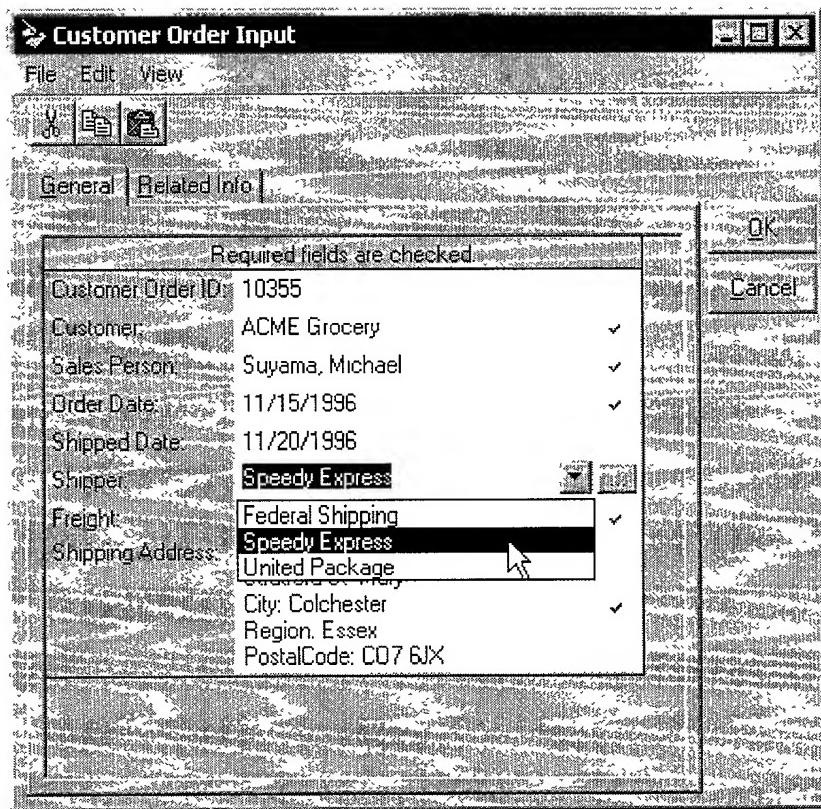


FIG. 33

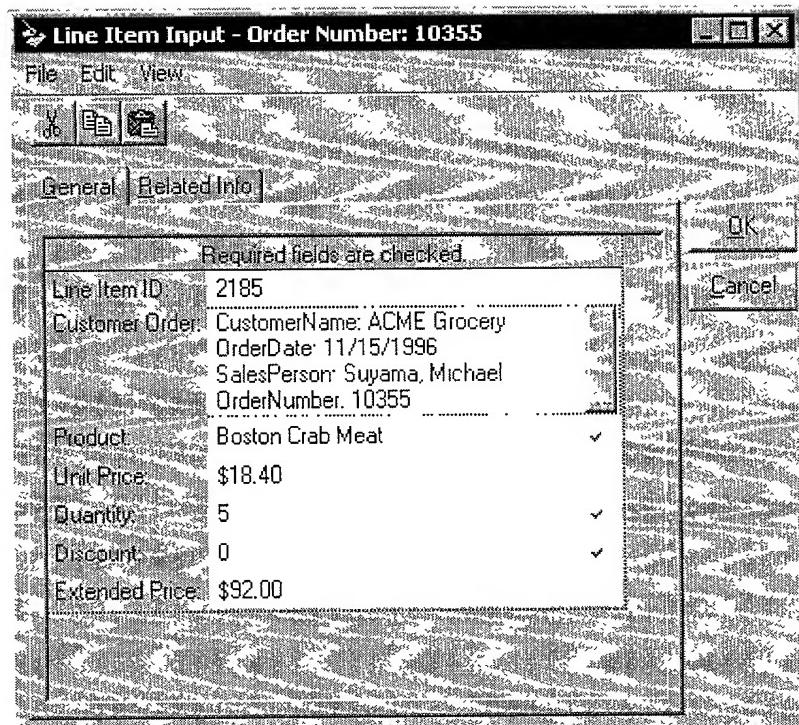


FIG. 34

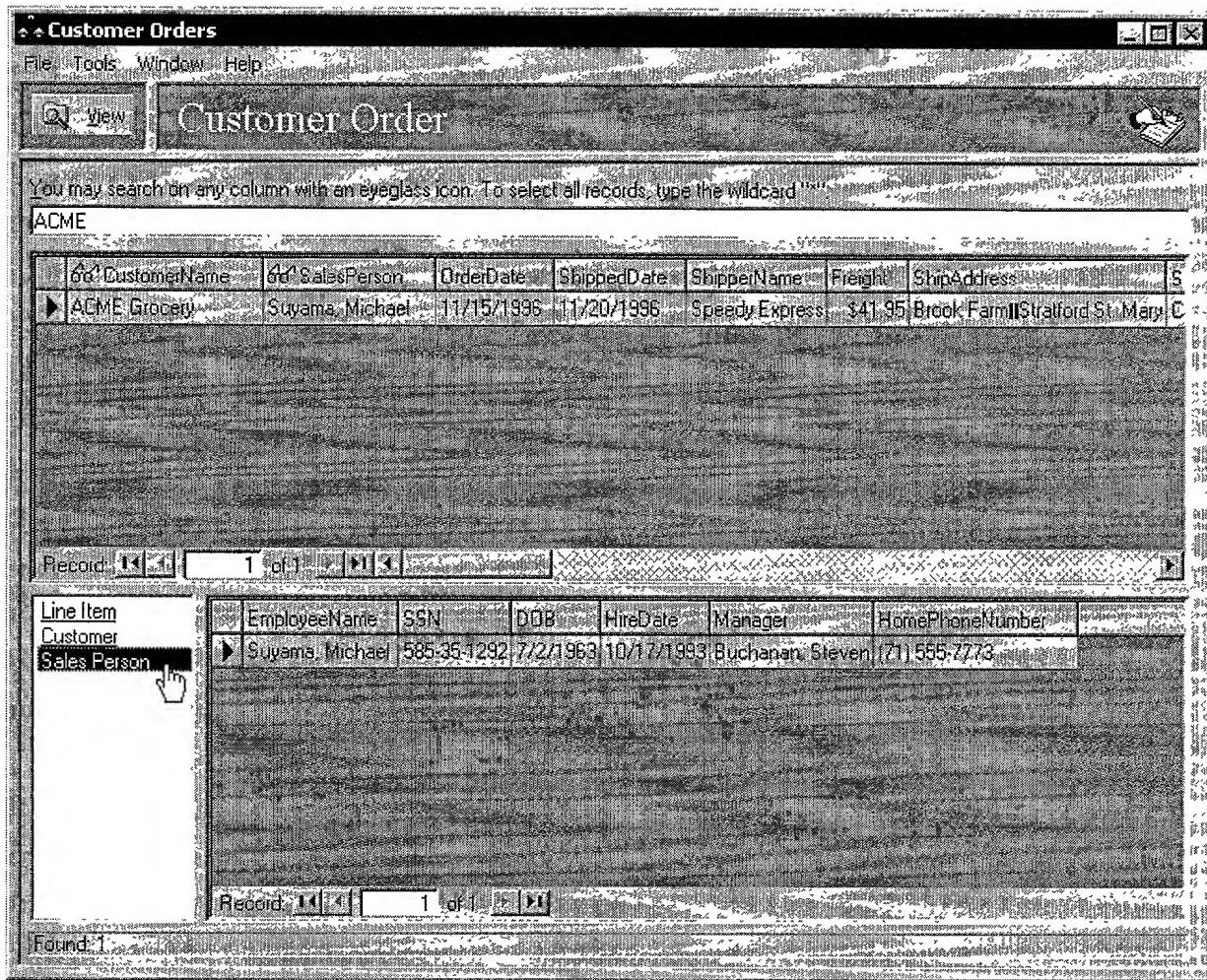


FIG. 35

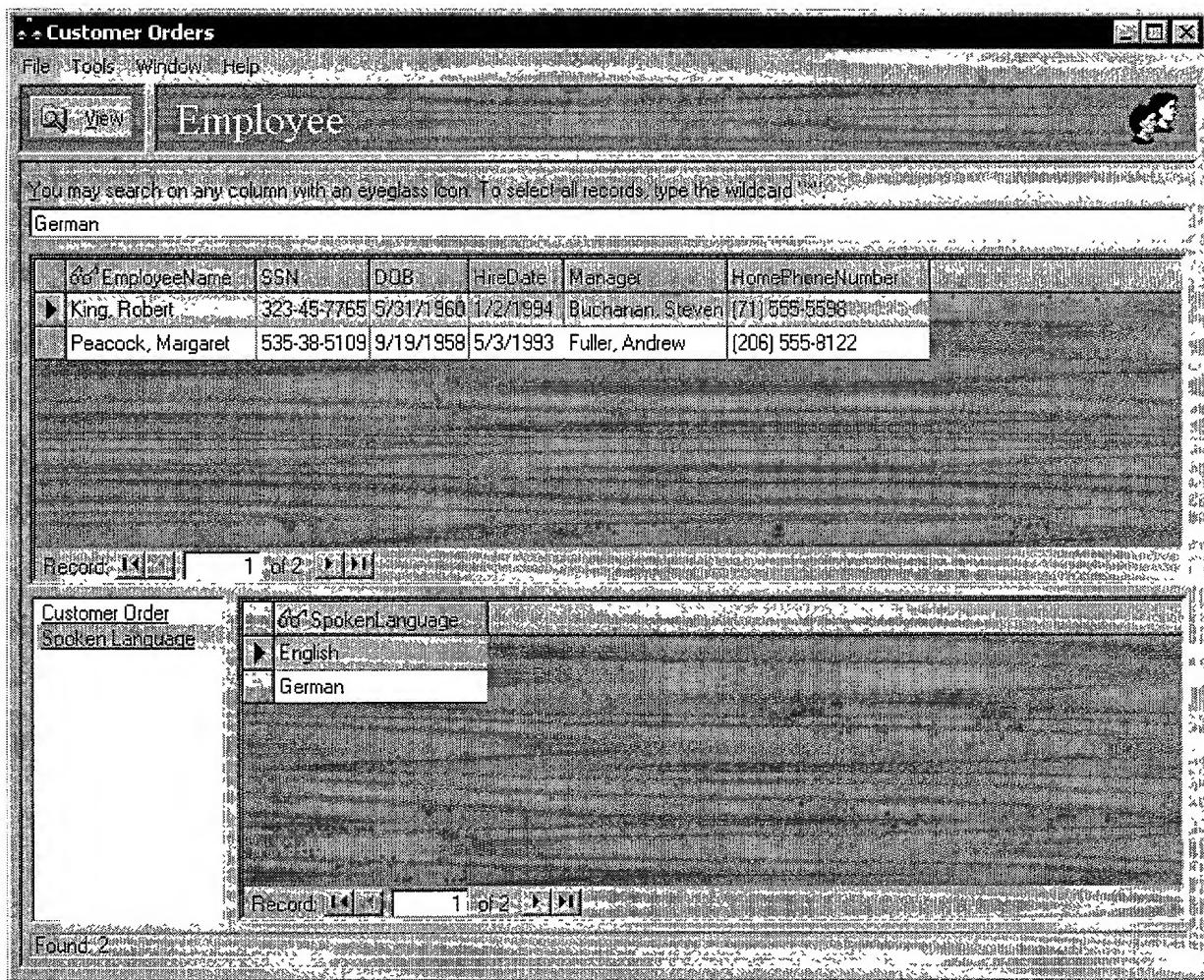


FIG. 36

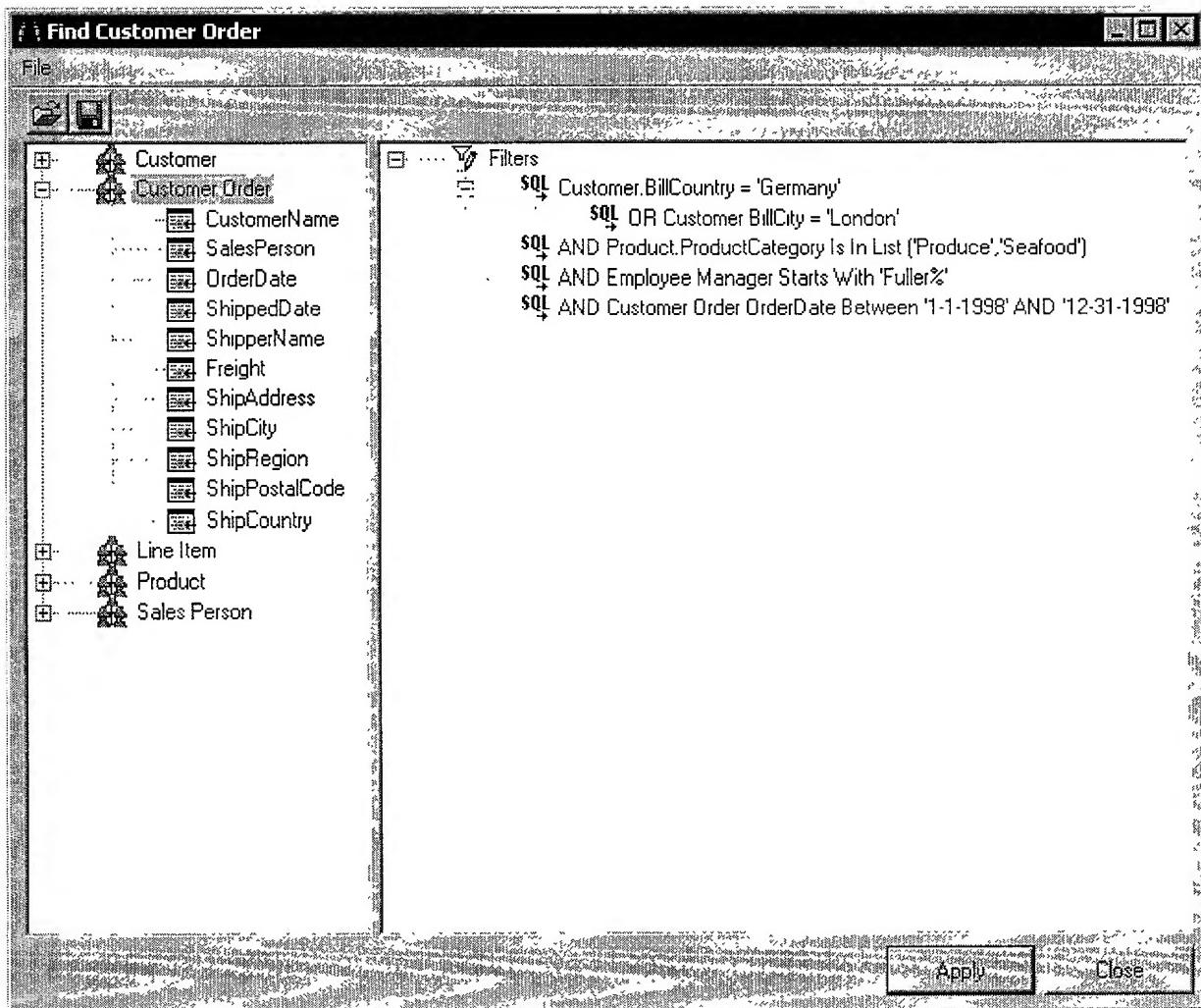


FIG. 37

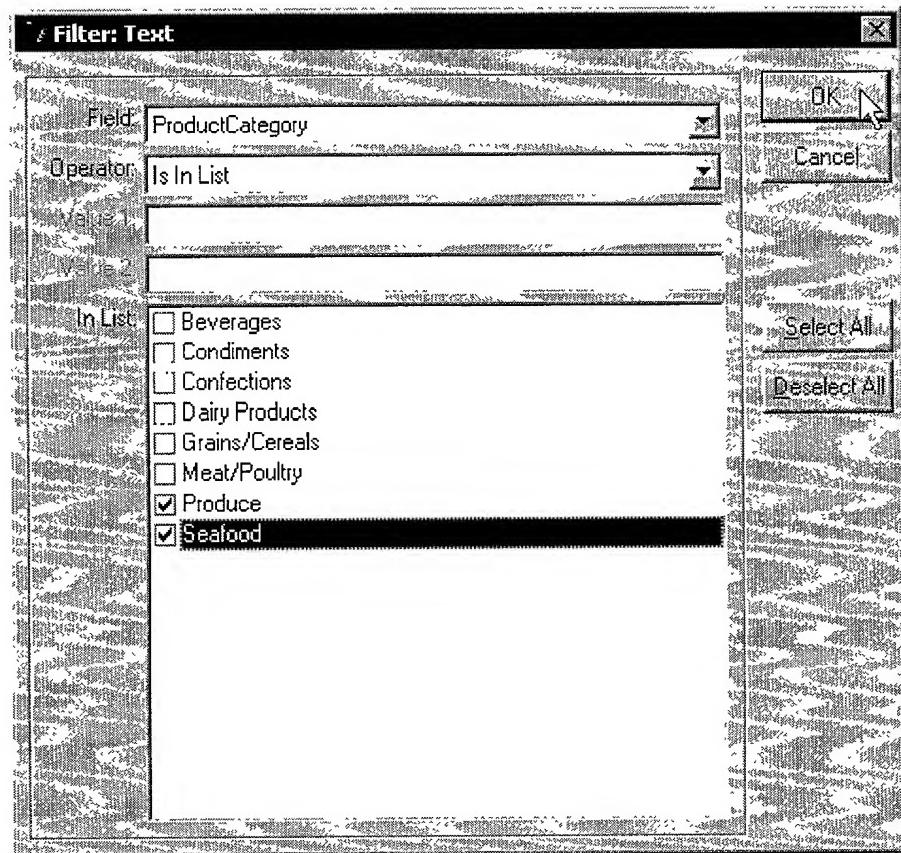


FIG. 38

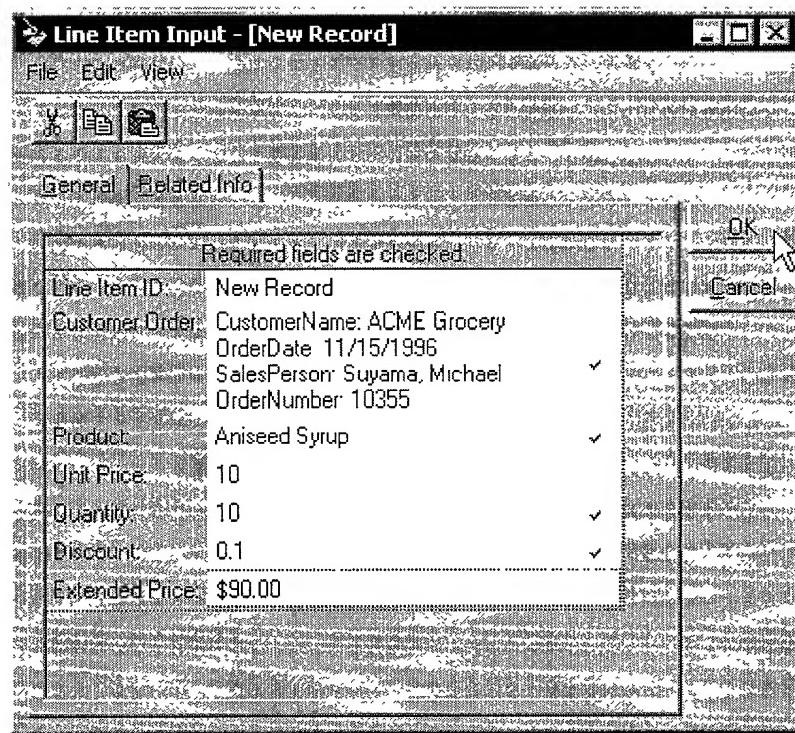


FIG. 39

Product	Quantity	Discount	Extended Price
Boston Crab Meat	5	0	\$92.00
Guaraná Fantástica	25	0	\$90.00
Ravioli Angelo	25	0	\$390.00
*			

Record (Filtered) 1 of 3 < > *|

FIG. 40

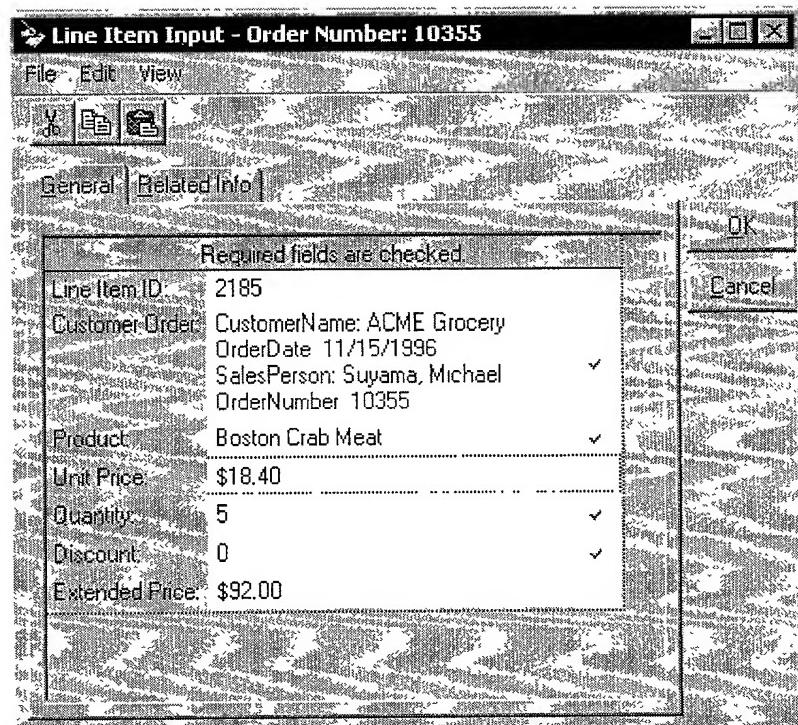


FIG. 41

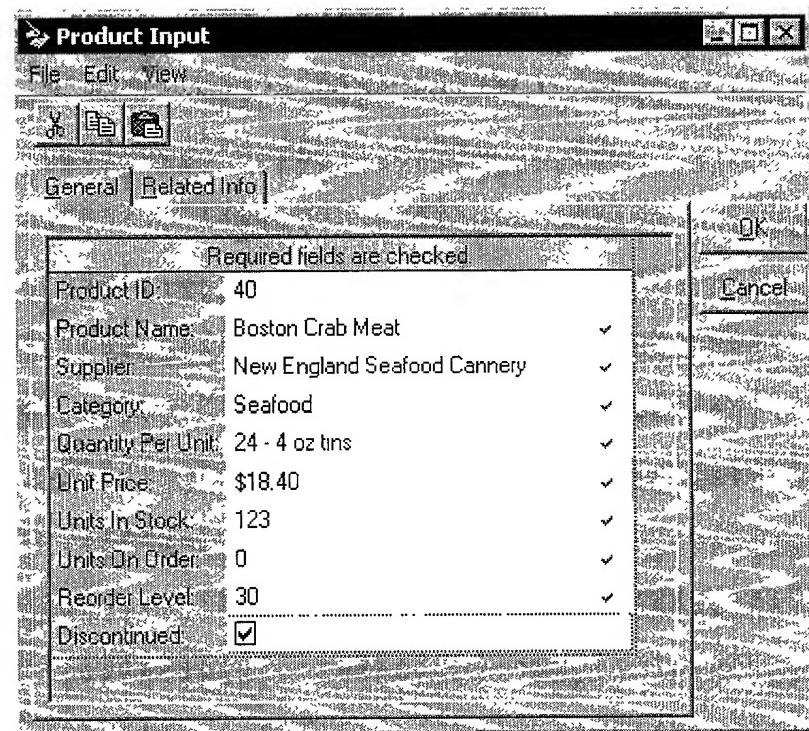


FIG. 42

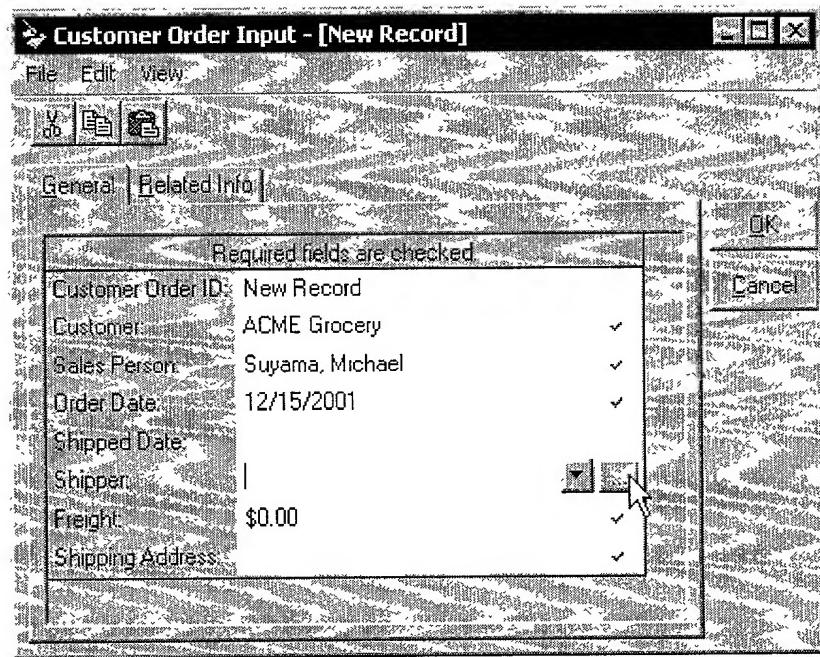


FIG. 43

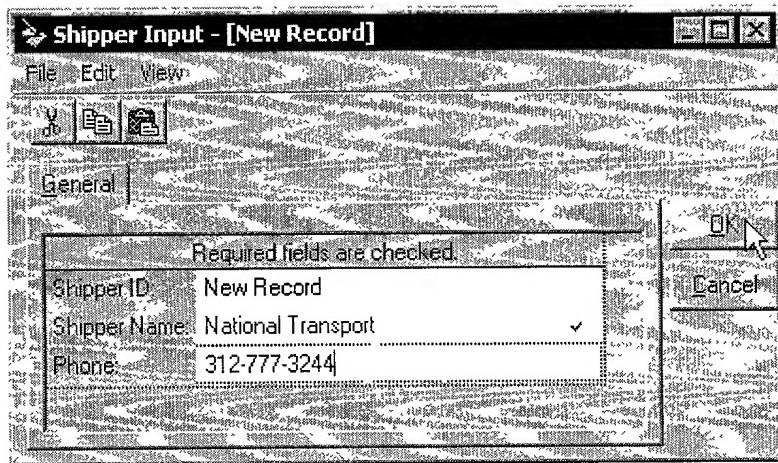


FIG. 44

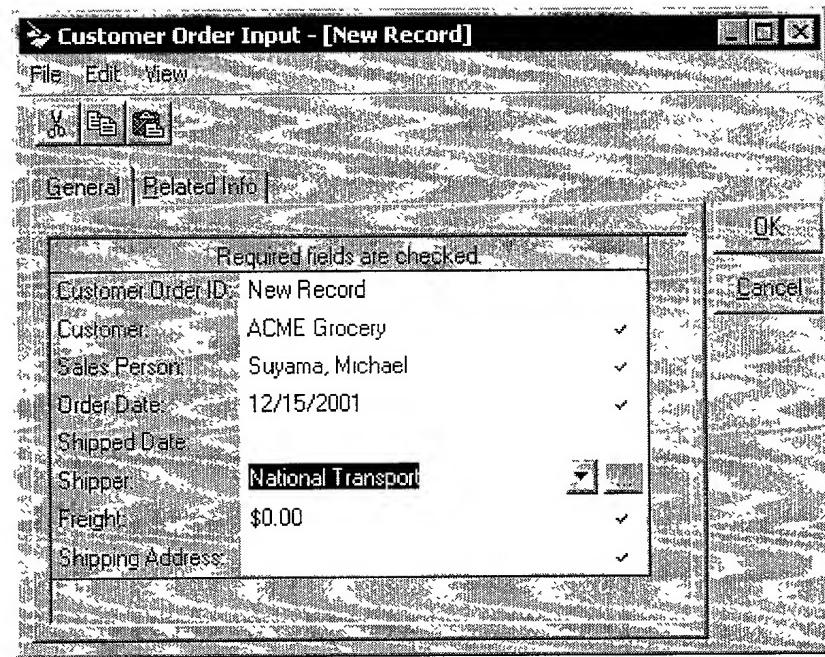


FIG. 45

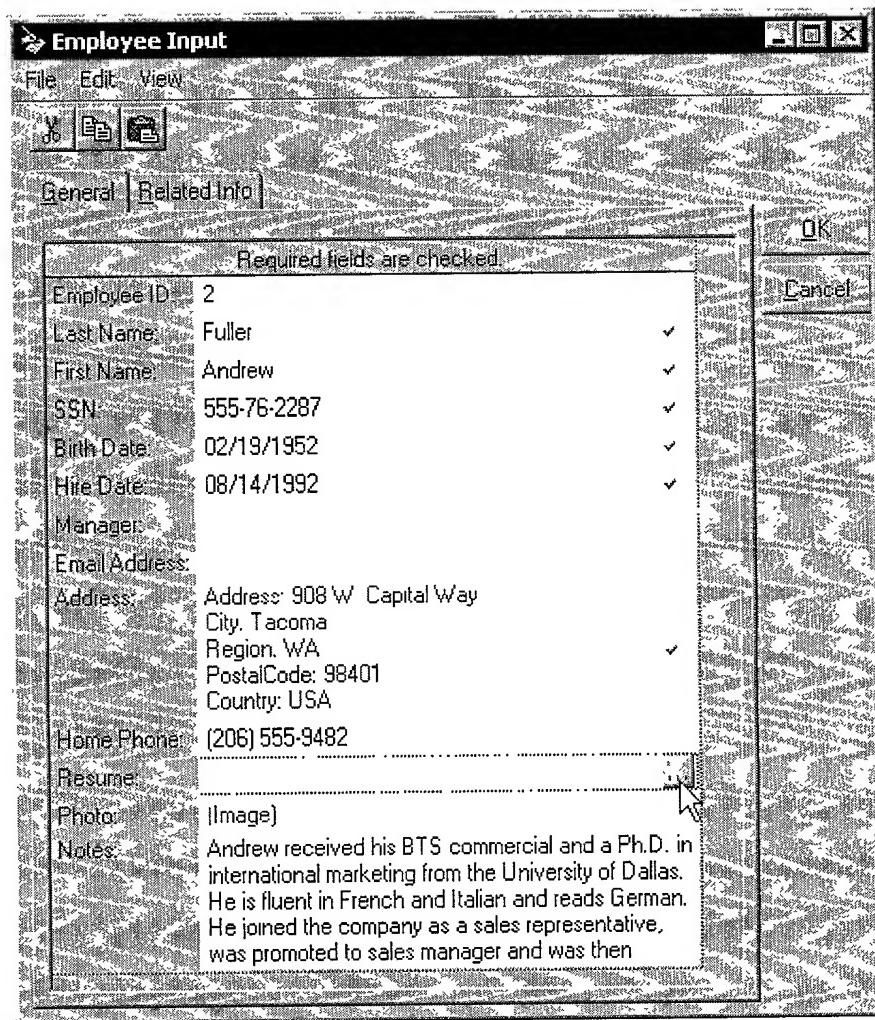


FIG. 46

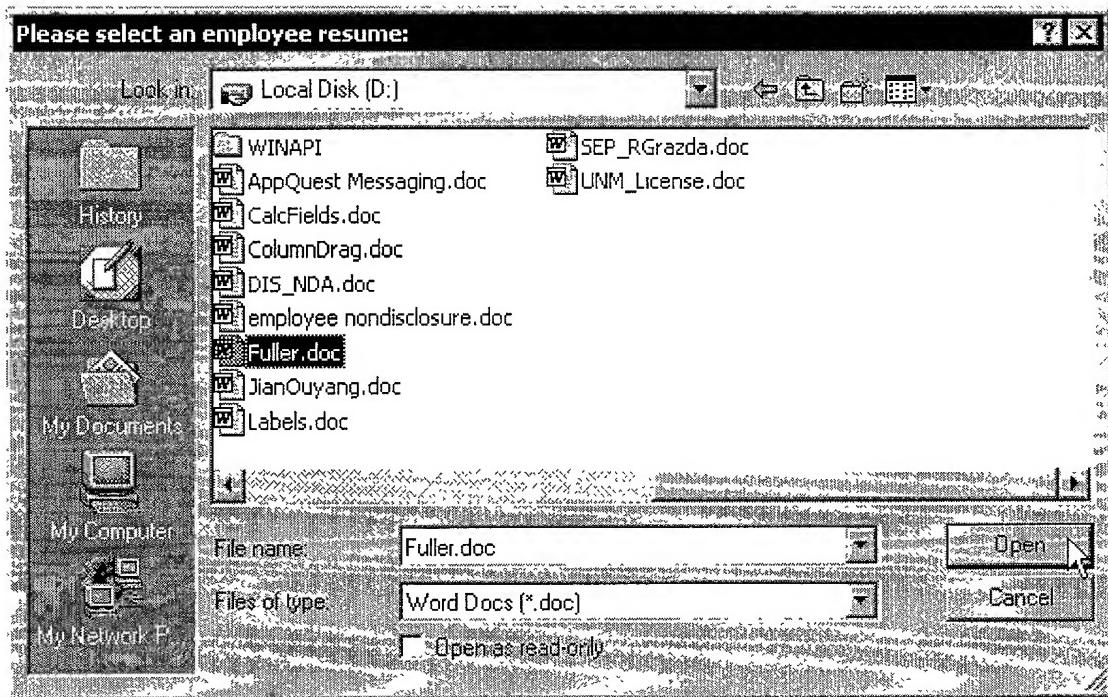


FIG. 47

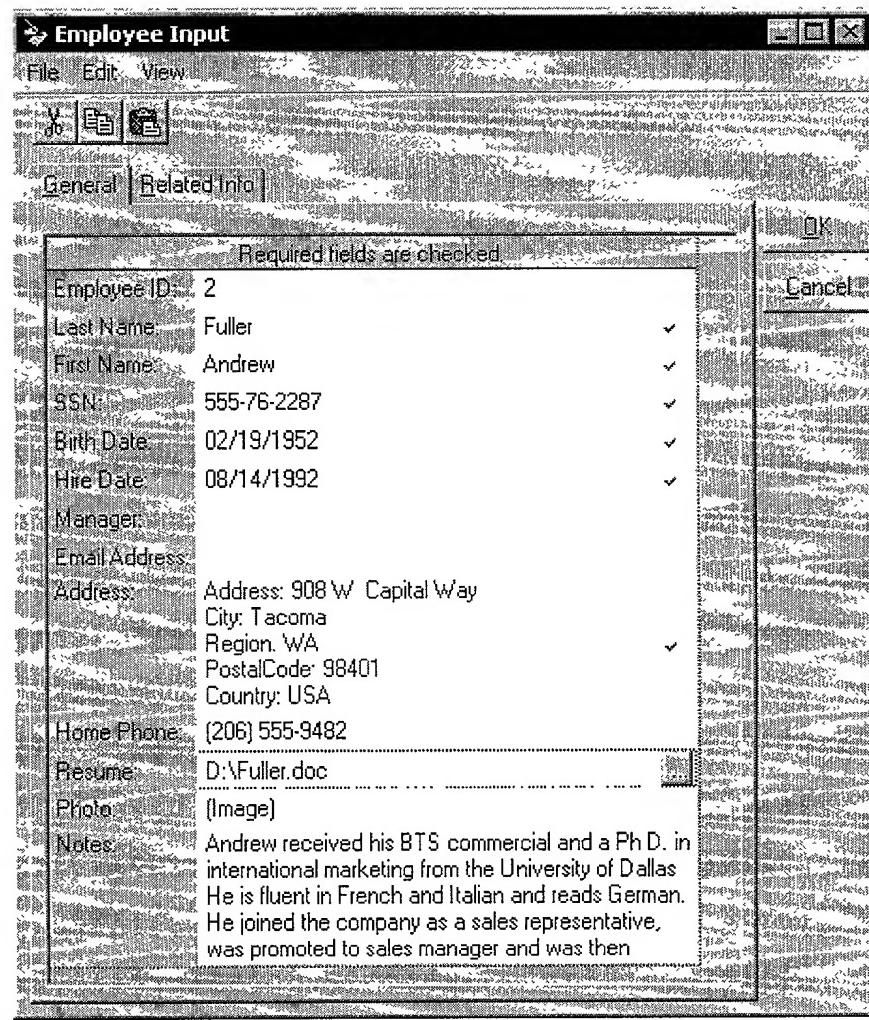


FIG. 48

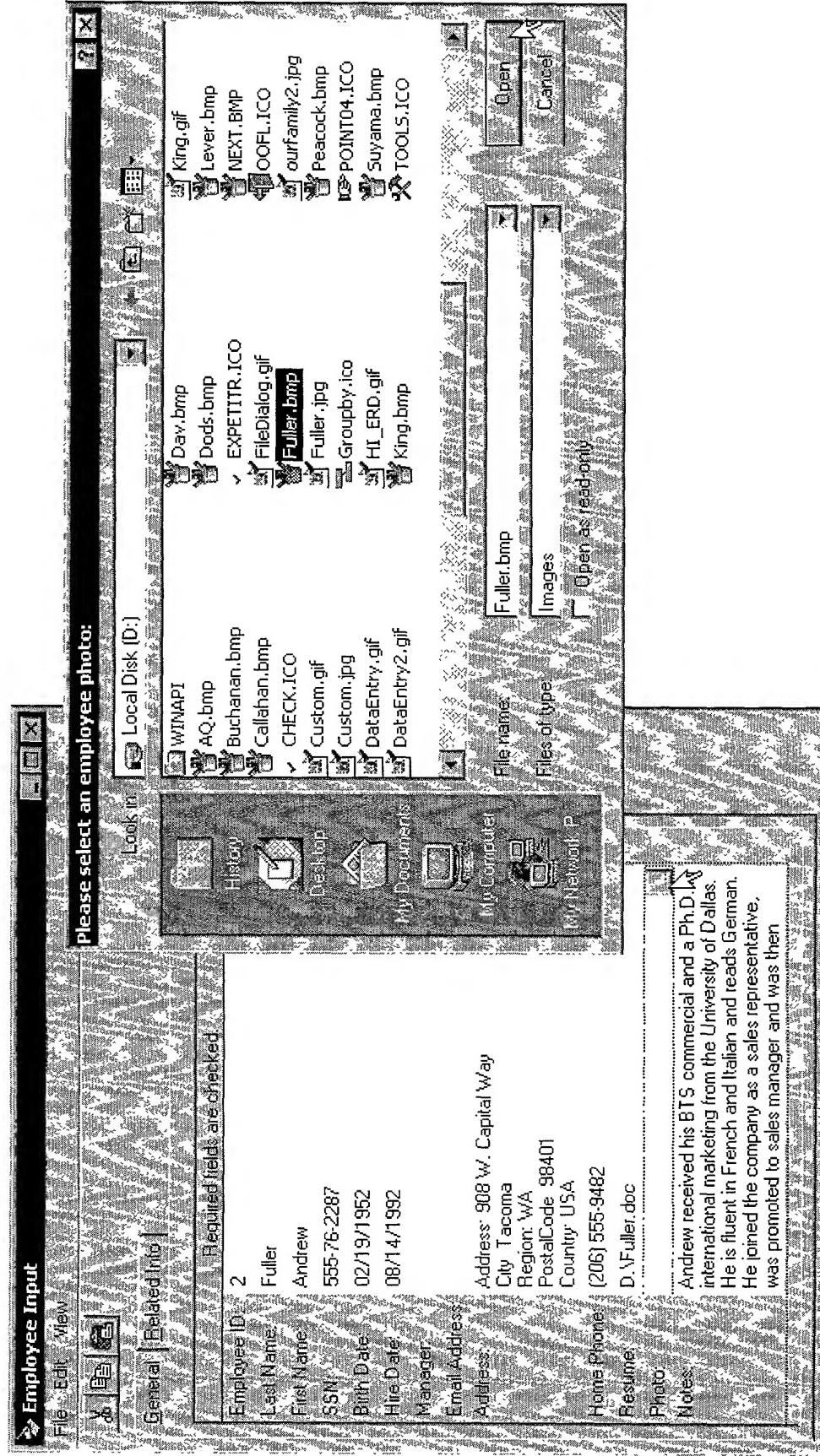


FIG. 49

Employee Input

File Edit View

General | Related Info | **Required fields are checked.**

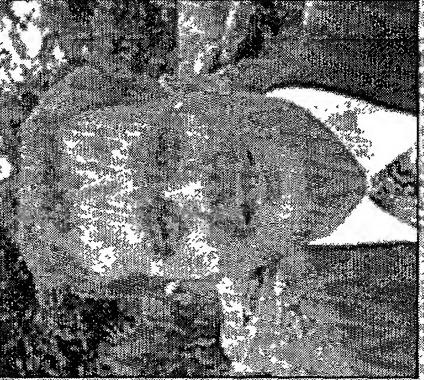
Employee ID:	2
Last Name:	Fuller
First Name:	Andrew
SSN:	555-76-2287
Birth Date:	02/19/1952
Hire Date:	08/14/1992
Manager:	
Email Address:	
Address:	Address: 908 W. Capital Way City: Tacoma Region: WA PostalCode: 98401 Country: USA
Home Phone:	(206) 555-9482
Resume:	D:\F\fuller.doc
Photo:	
Notes:	Andrew has received his BTS commercial and international marketing from the University. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then

FIG. 50

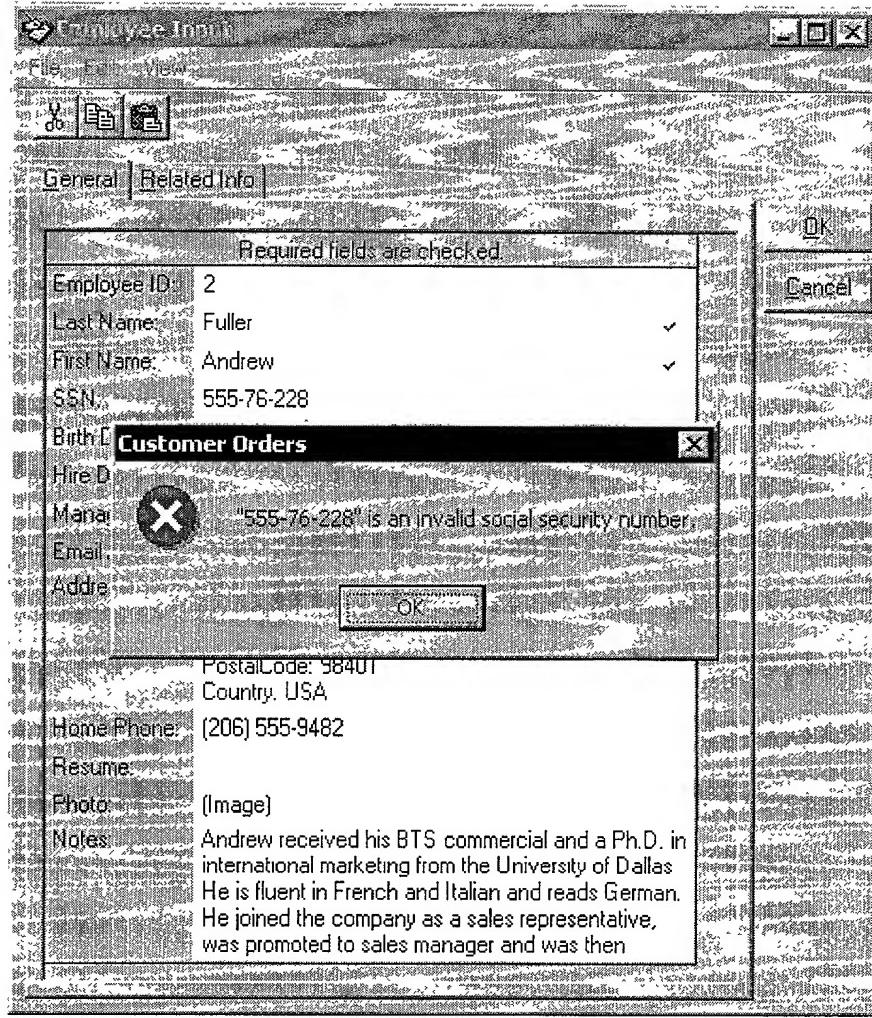


FIG. 51

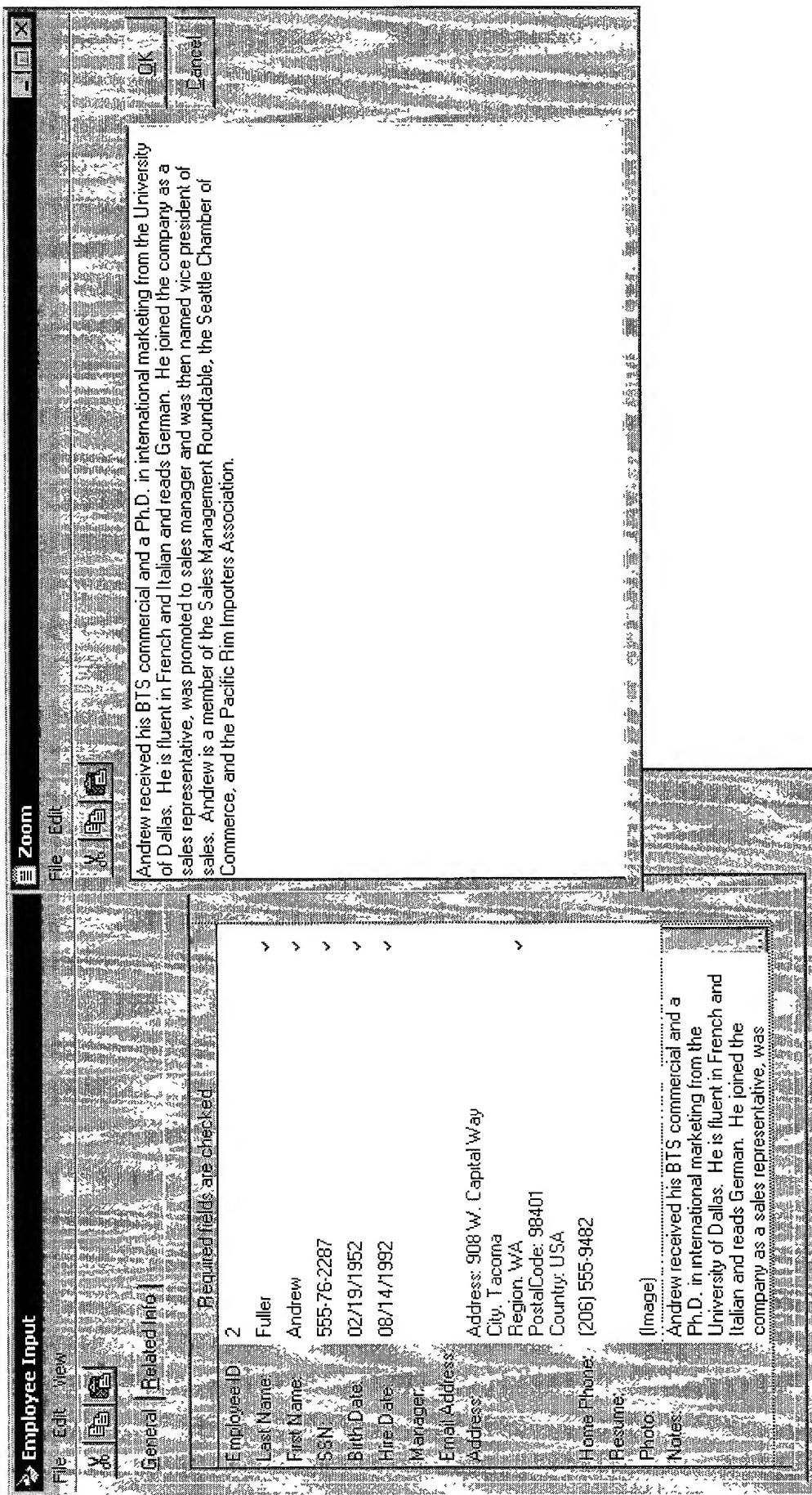


FIG. 52

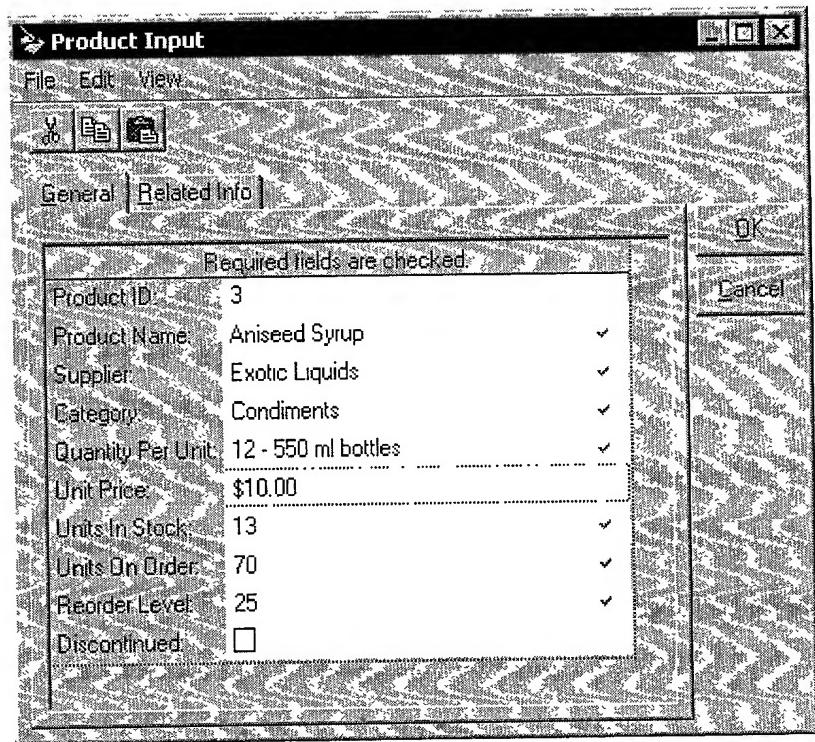
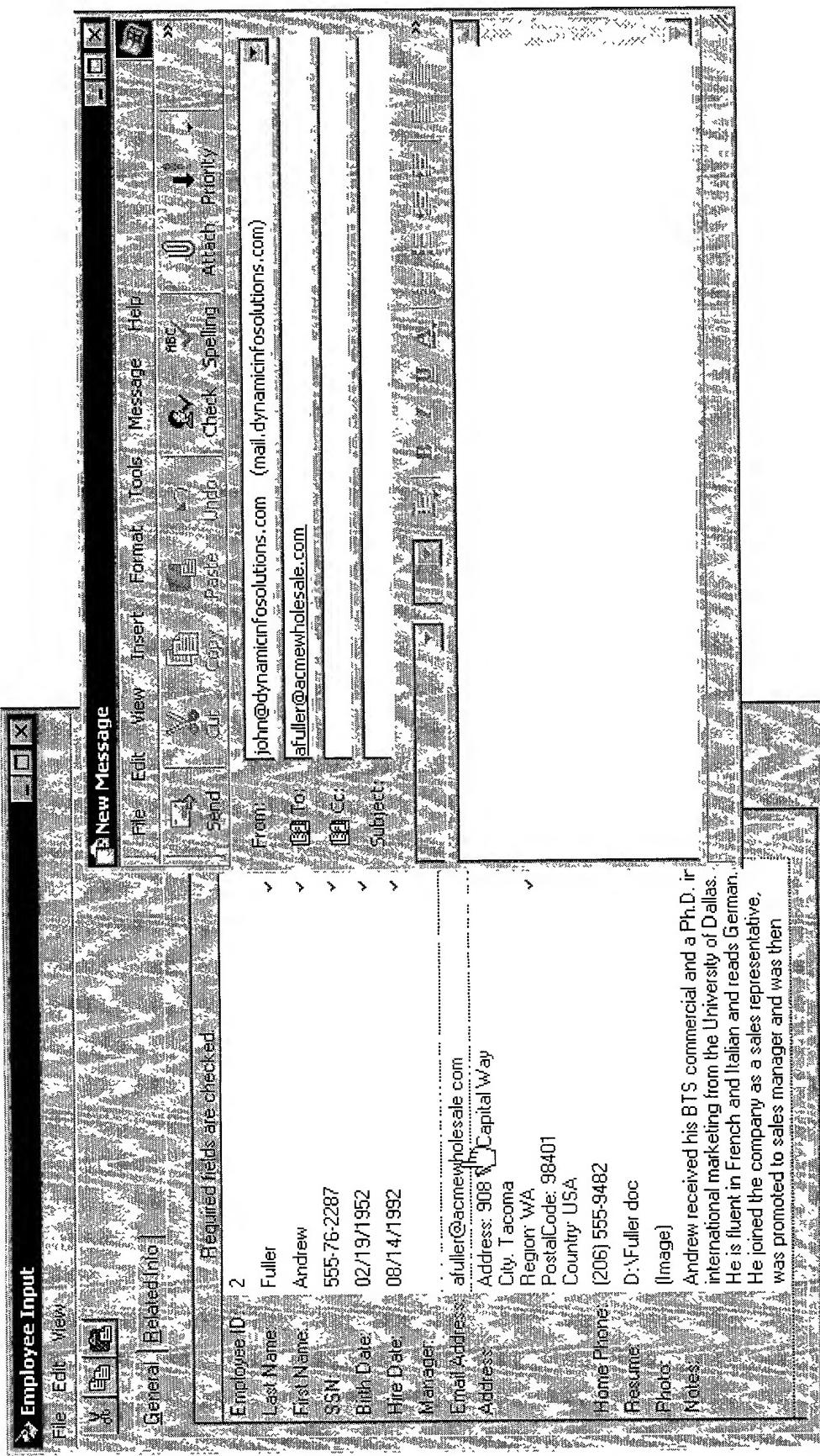


FIG. 53

FIG. 54



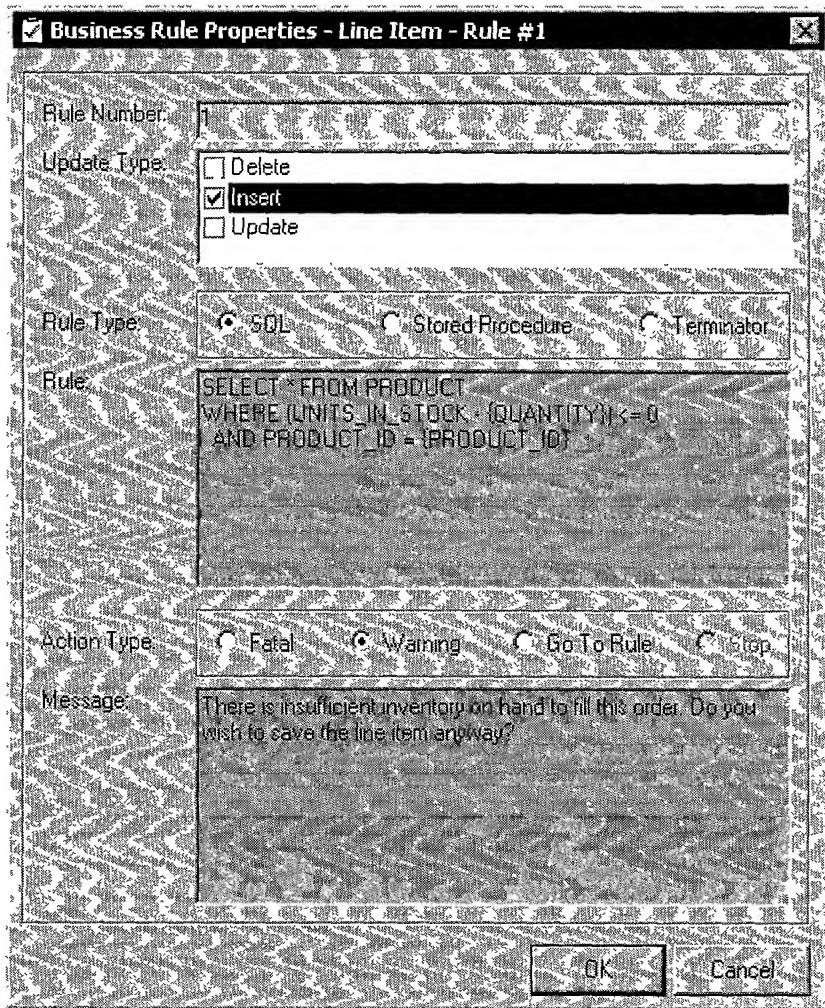


FIG. 55

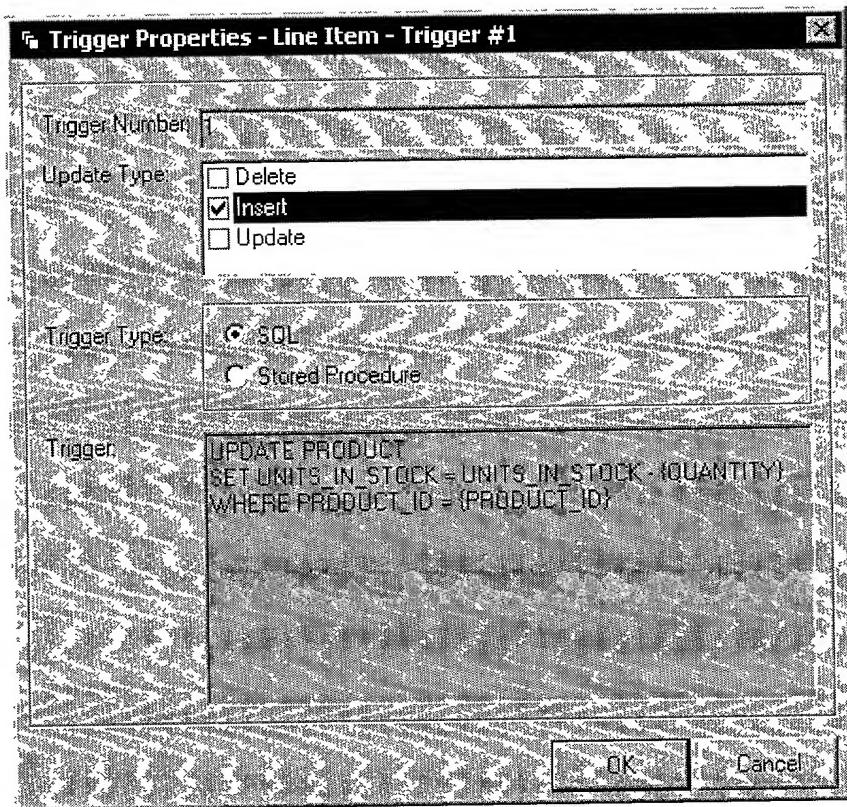


FIG. 56

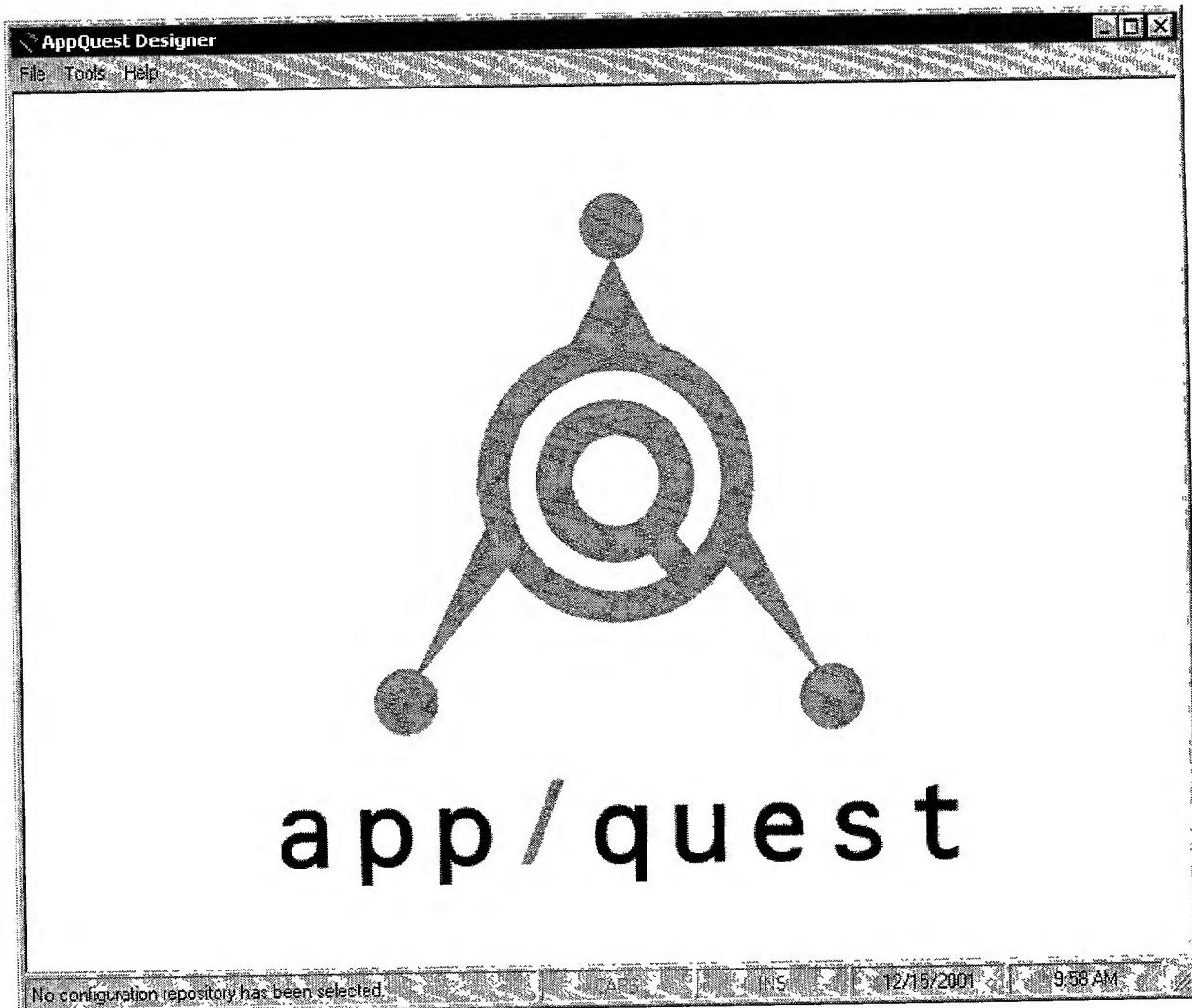
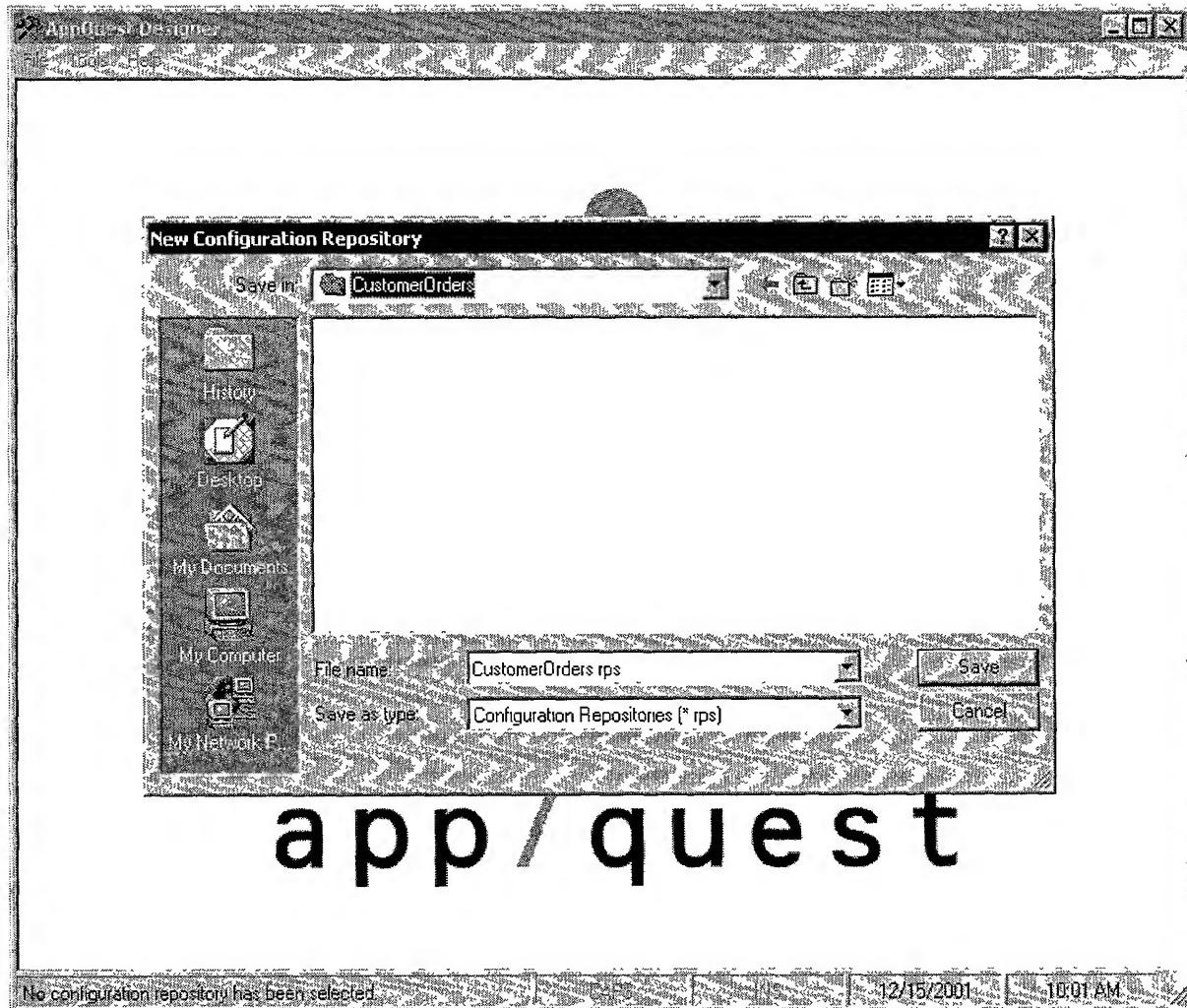


FIG. 57



app / quest

FIG. 58

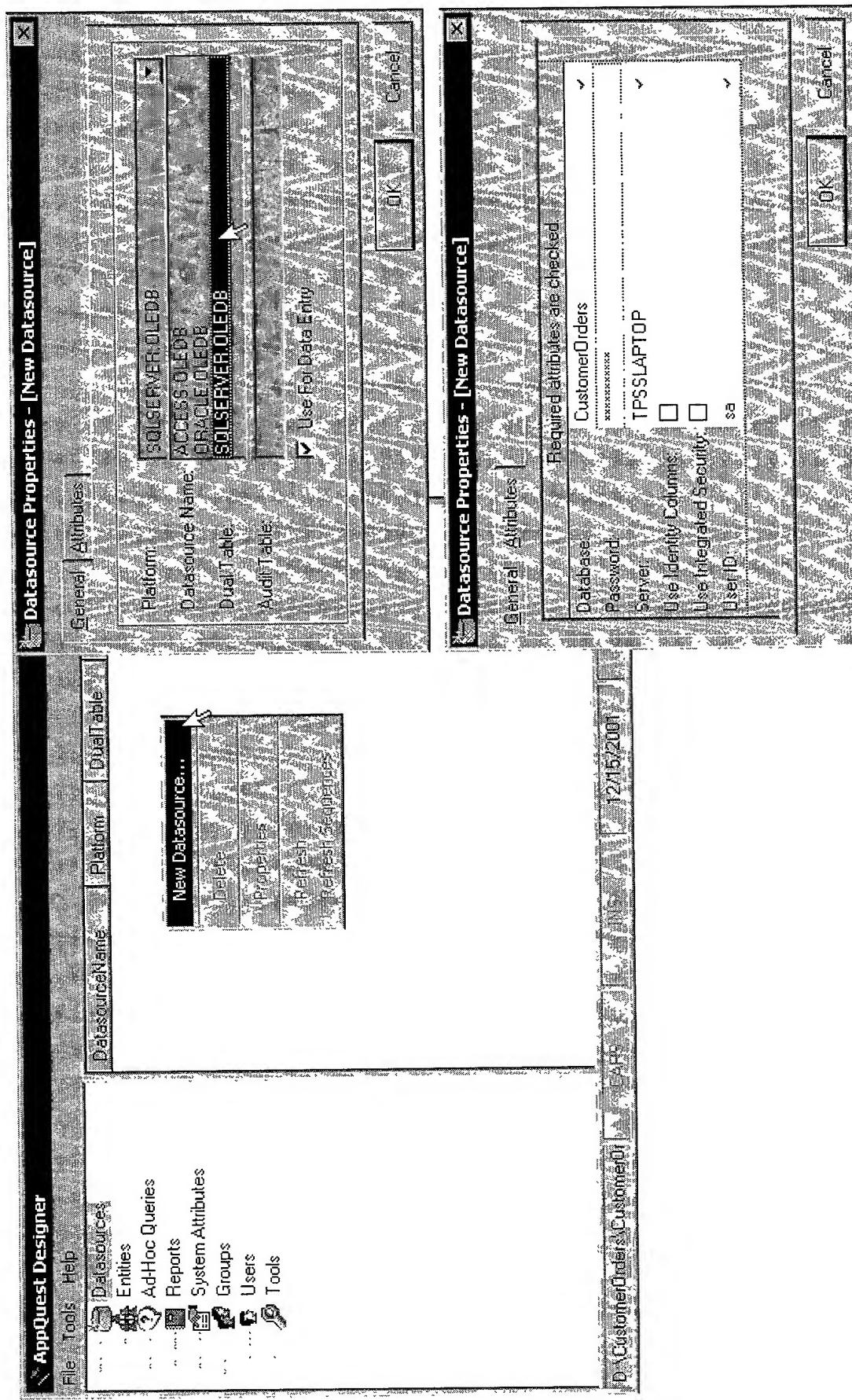


FIG. 59

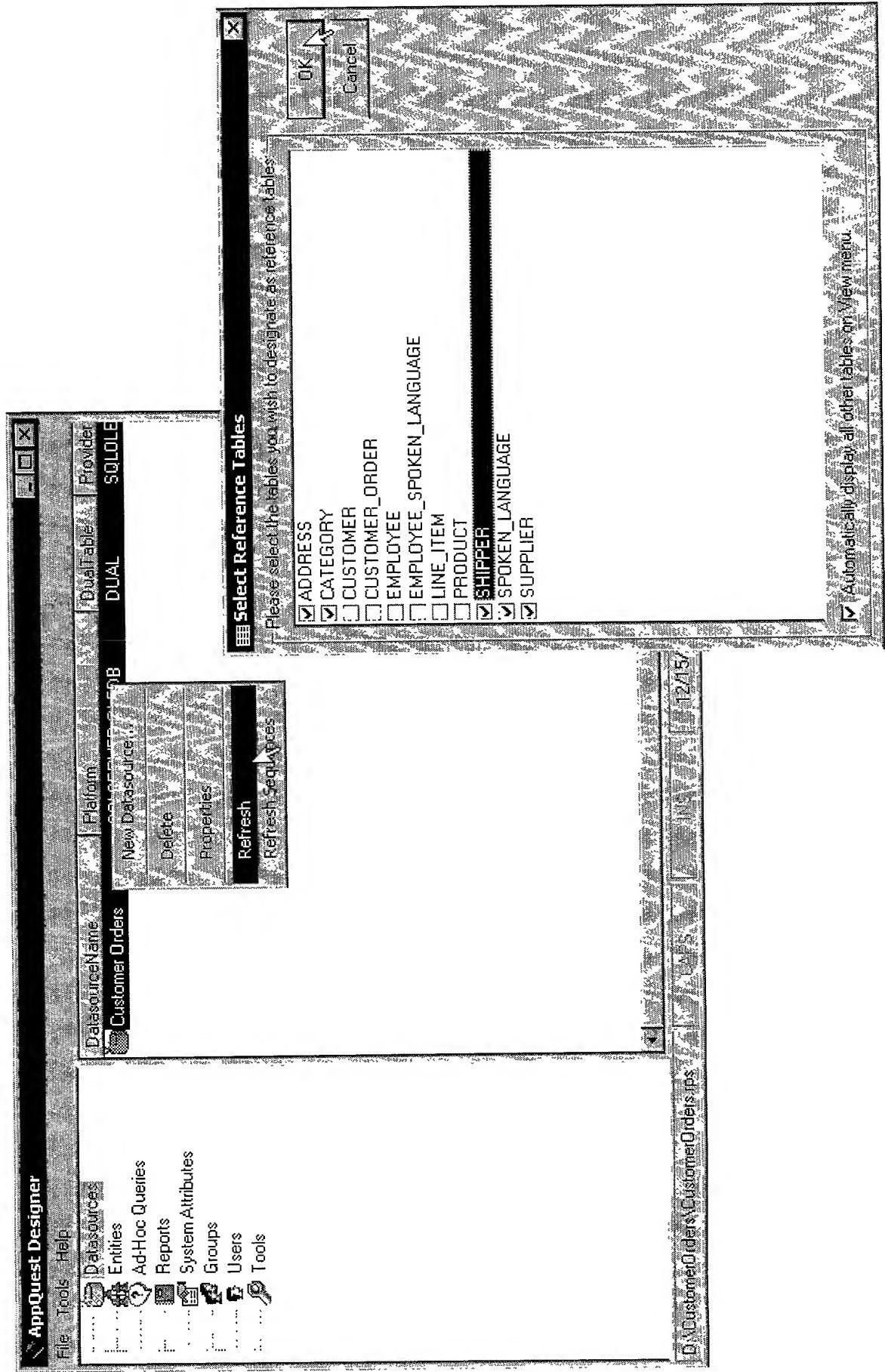


FIG. 60

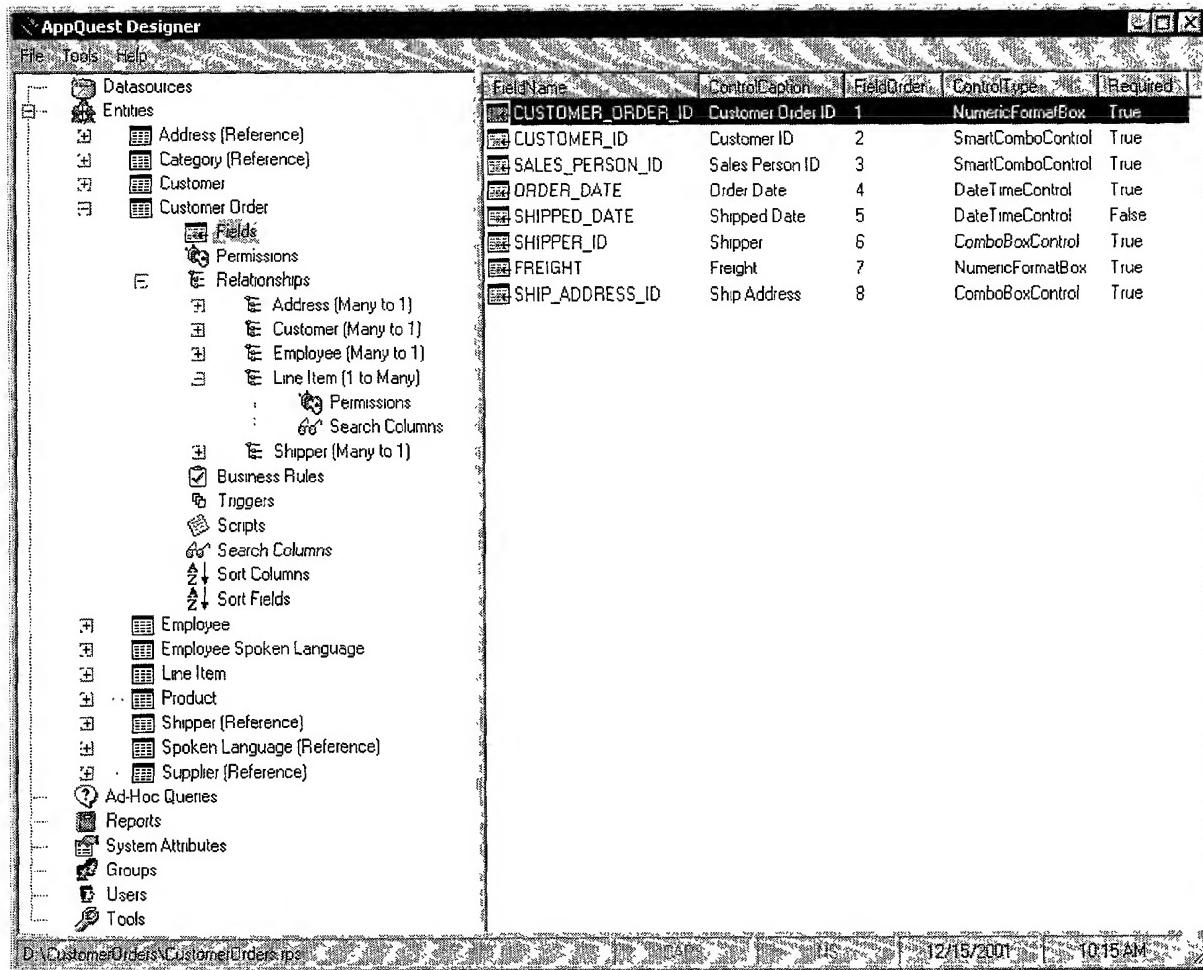


FIG. 61

FIG. 62

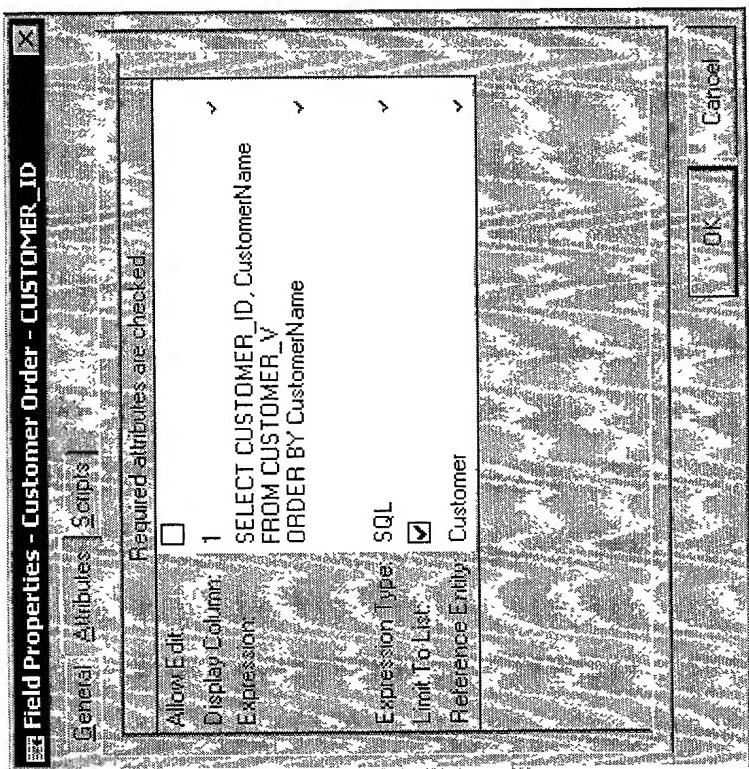
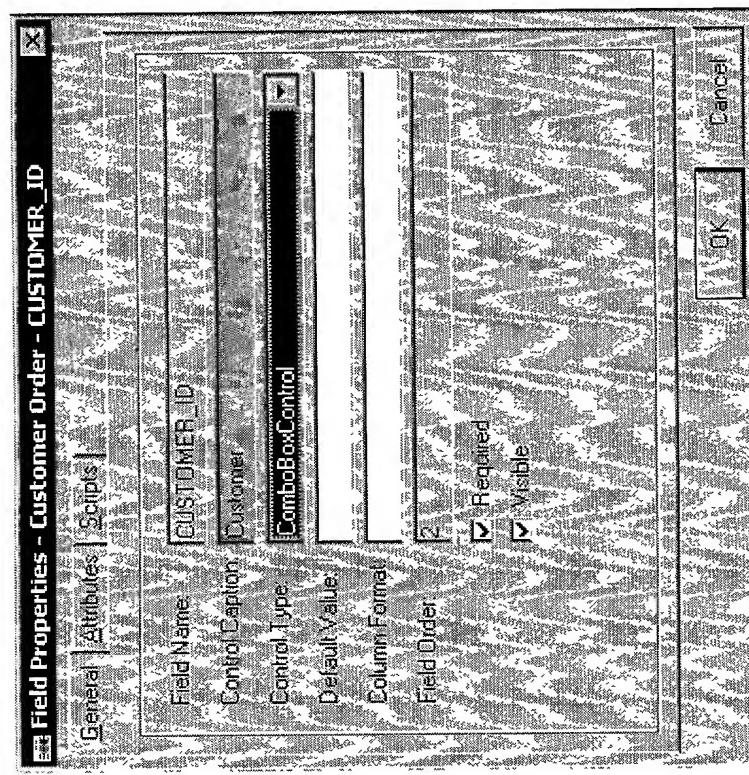


FIG. 63

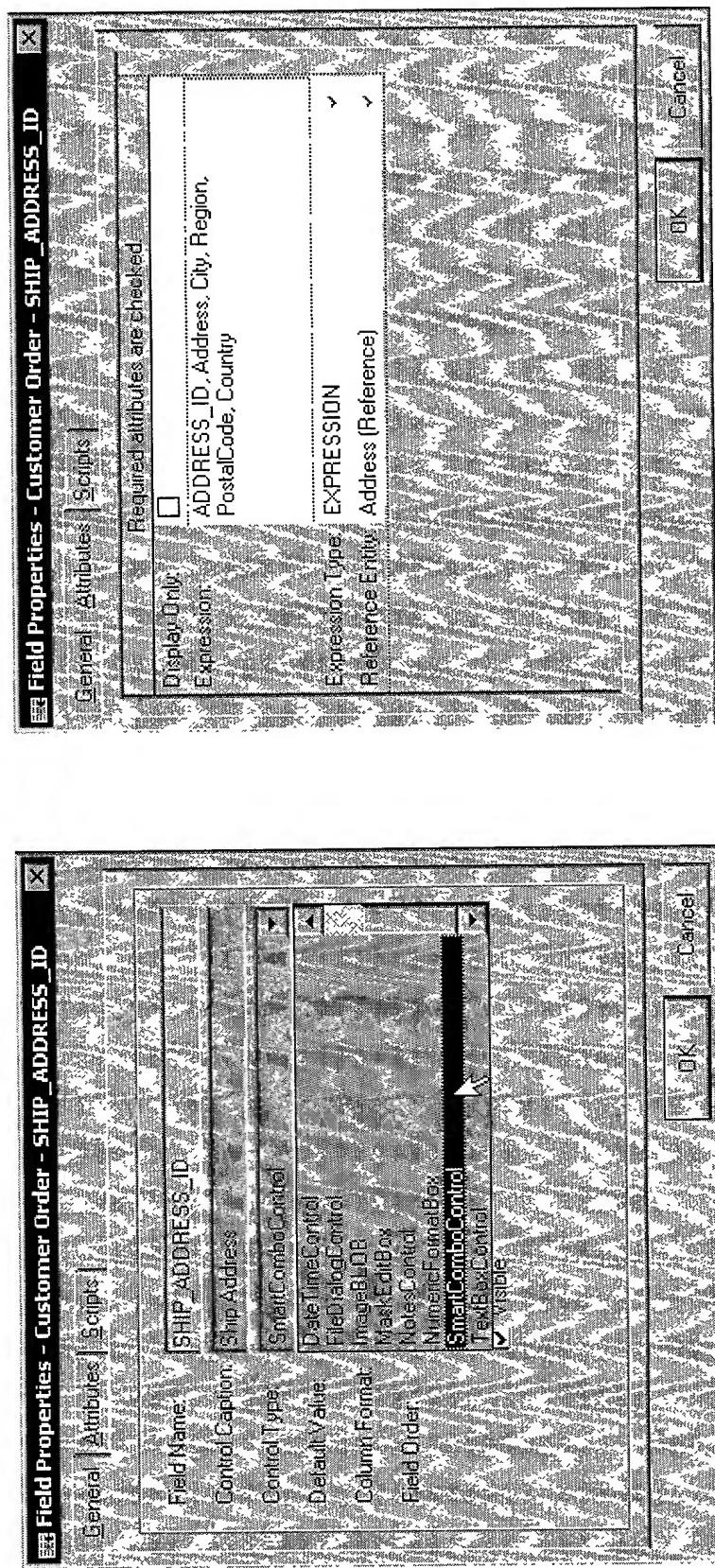
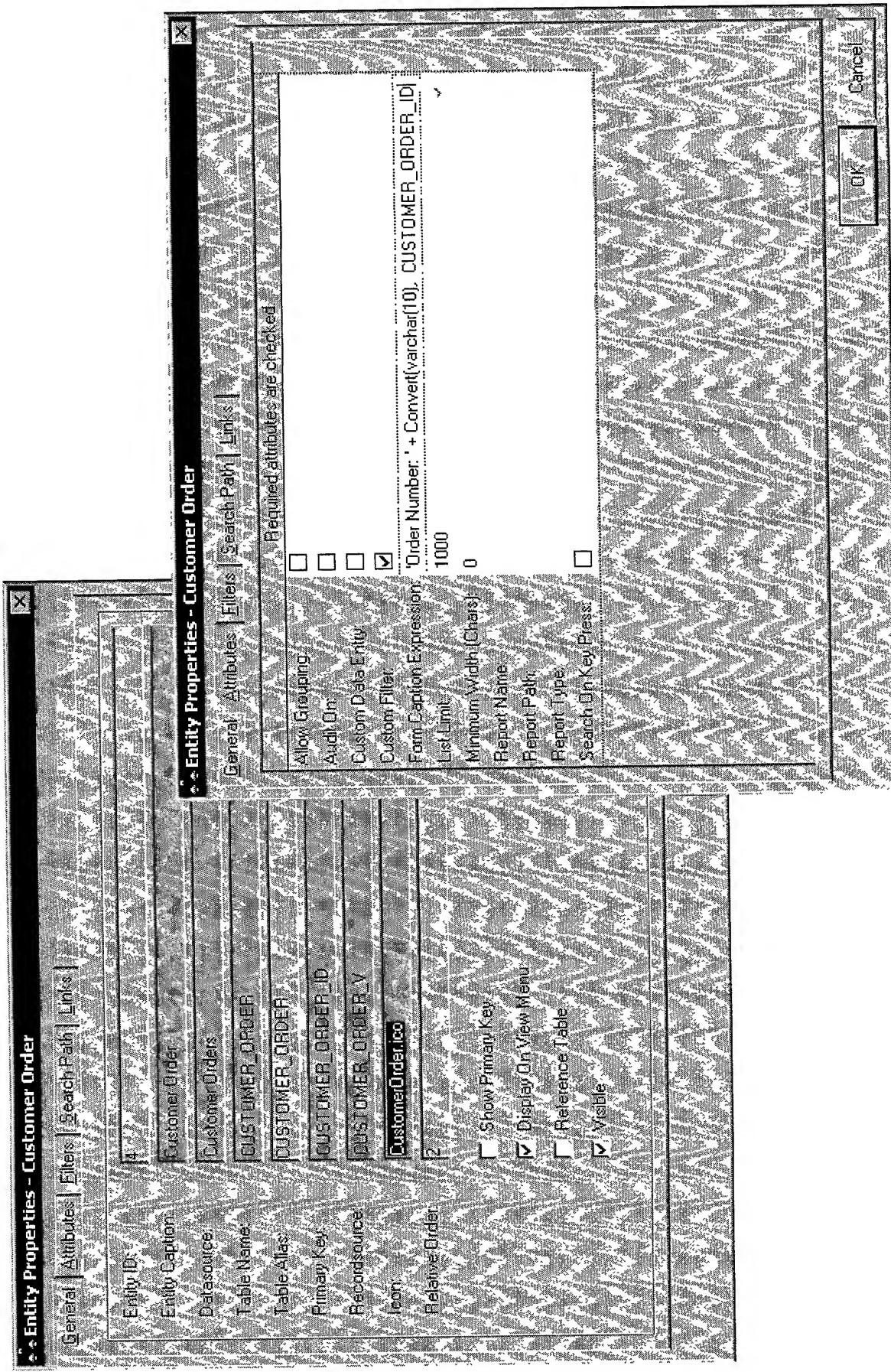


FIG. 64



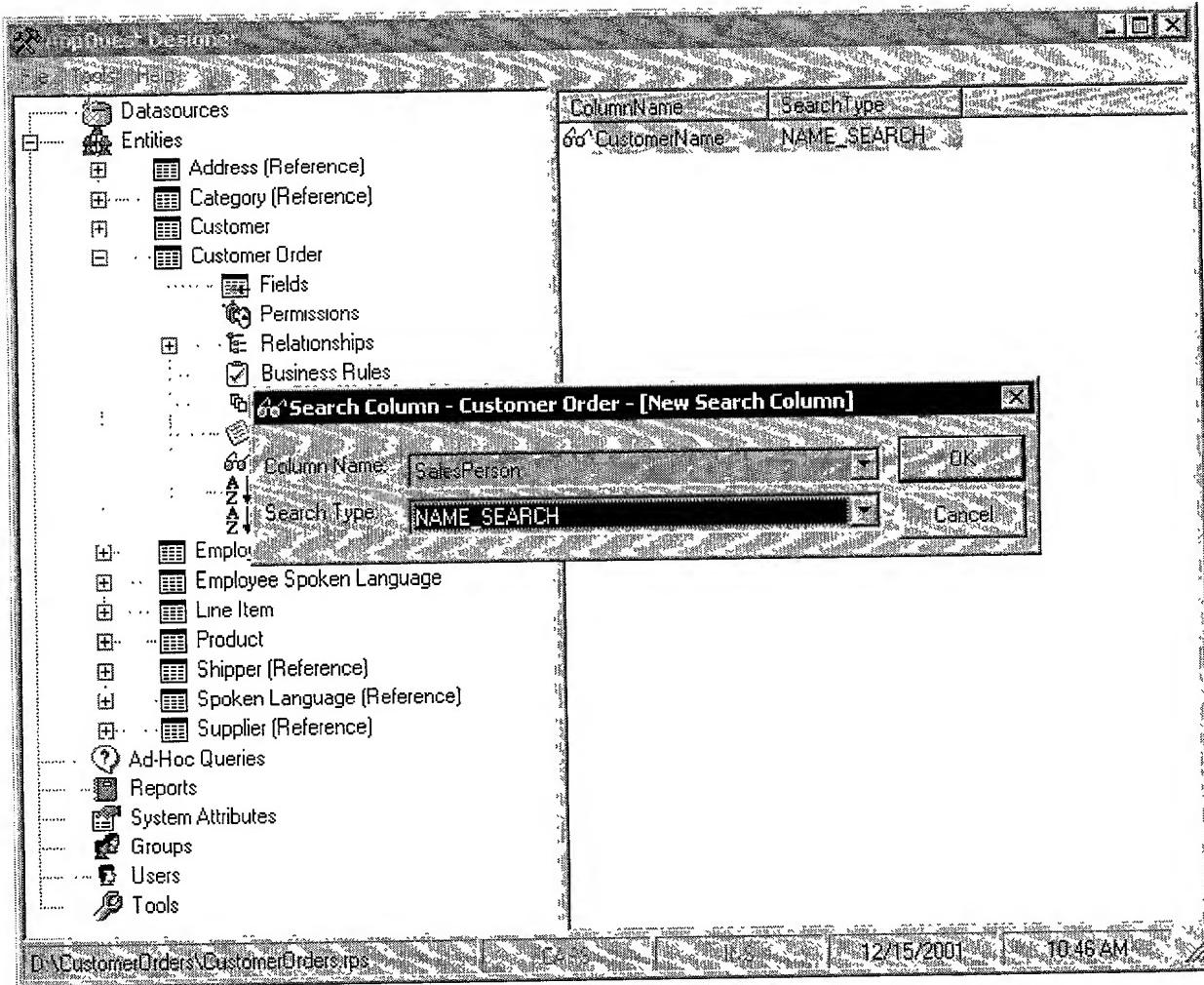


FIG. 65

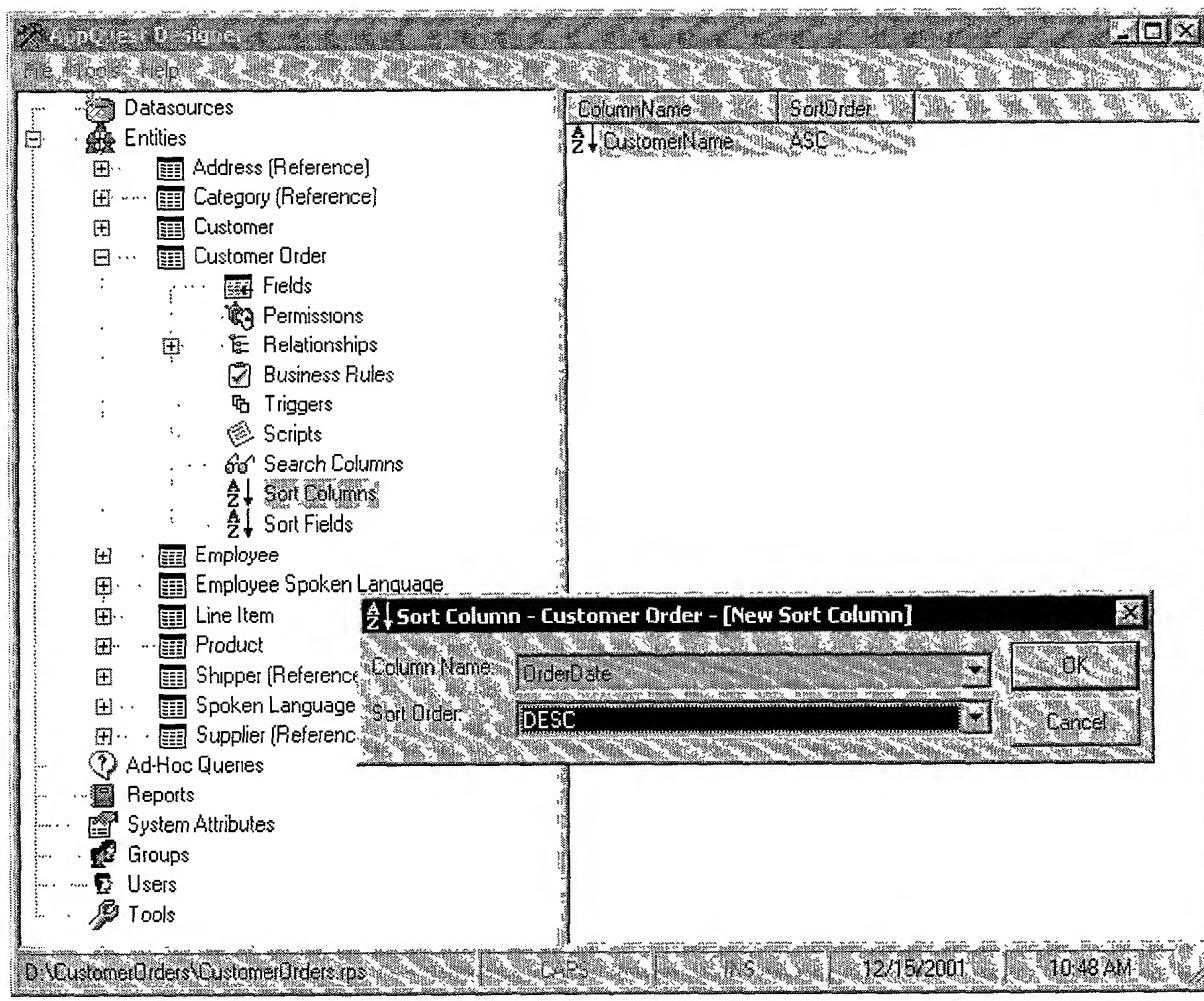


FIG. 66

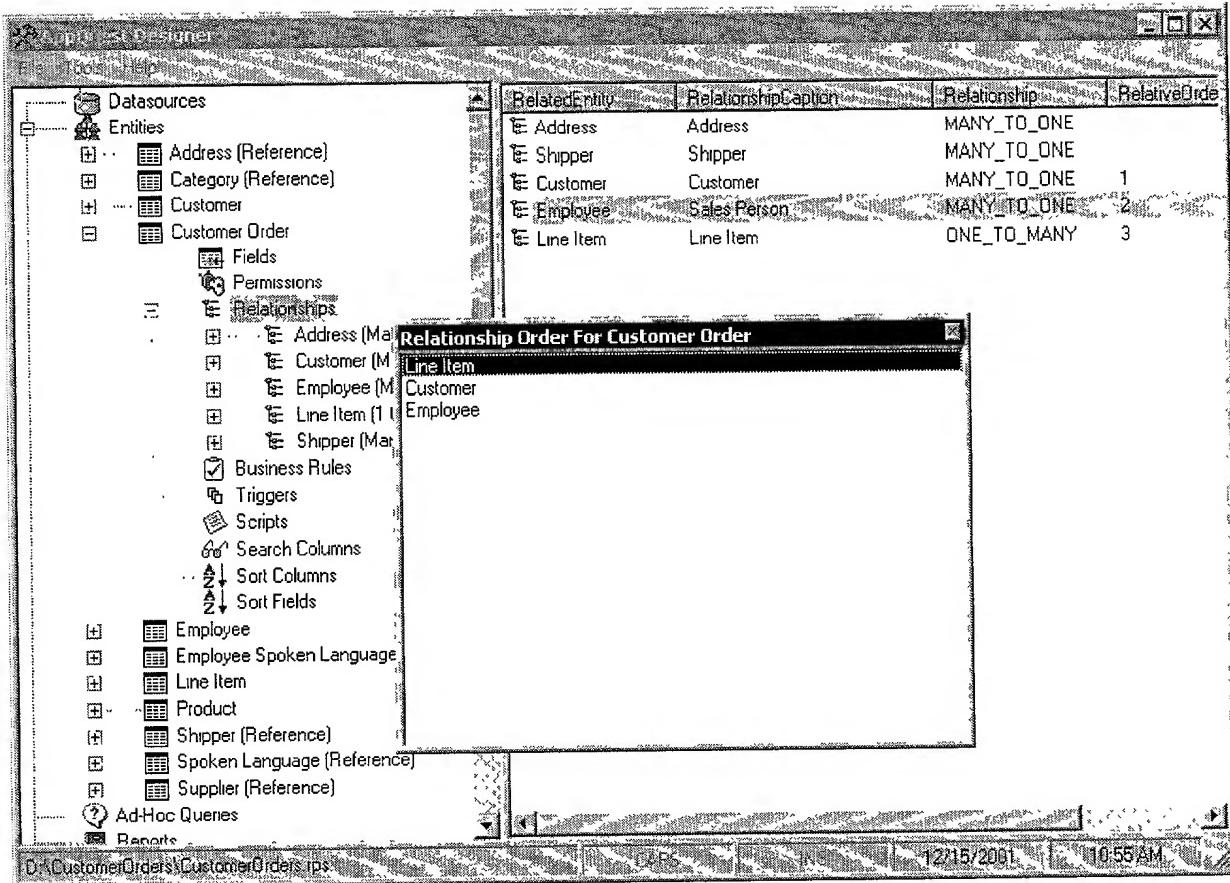


FIG. 67

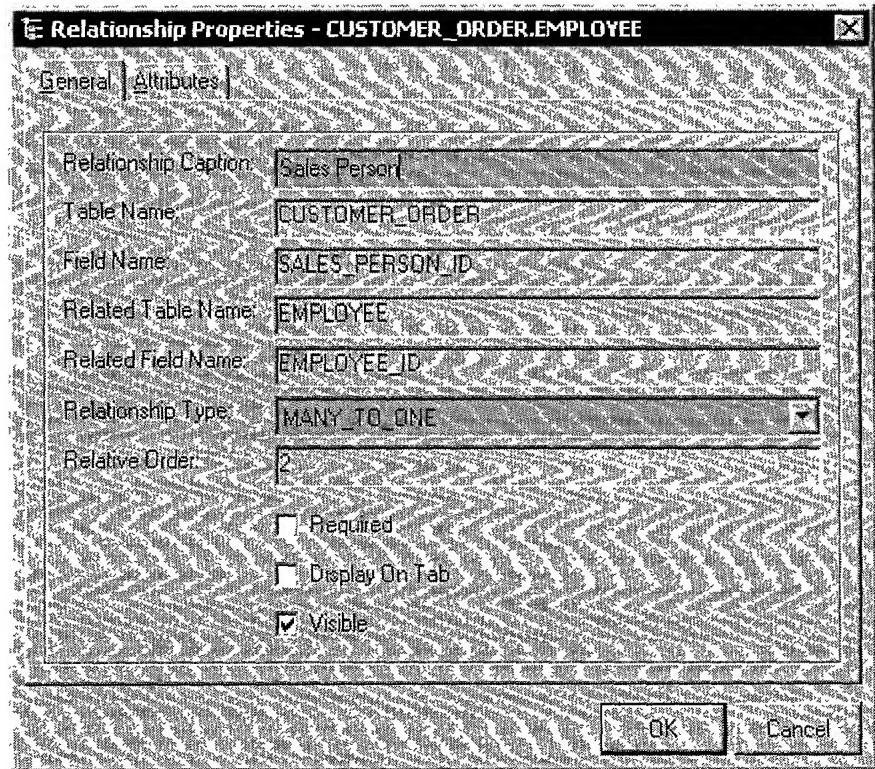


FIG. 68

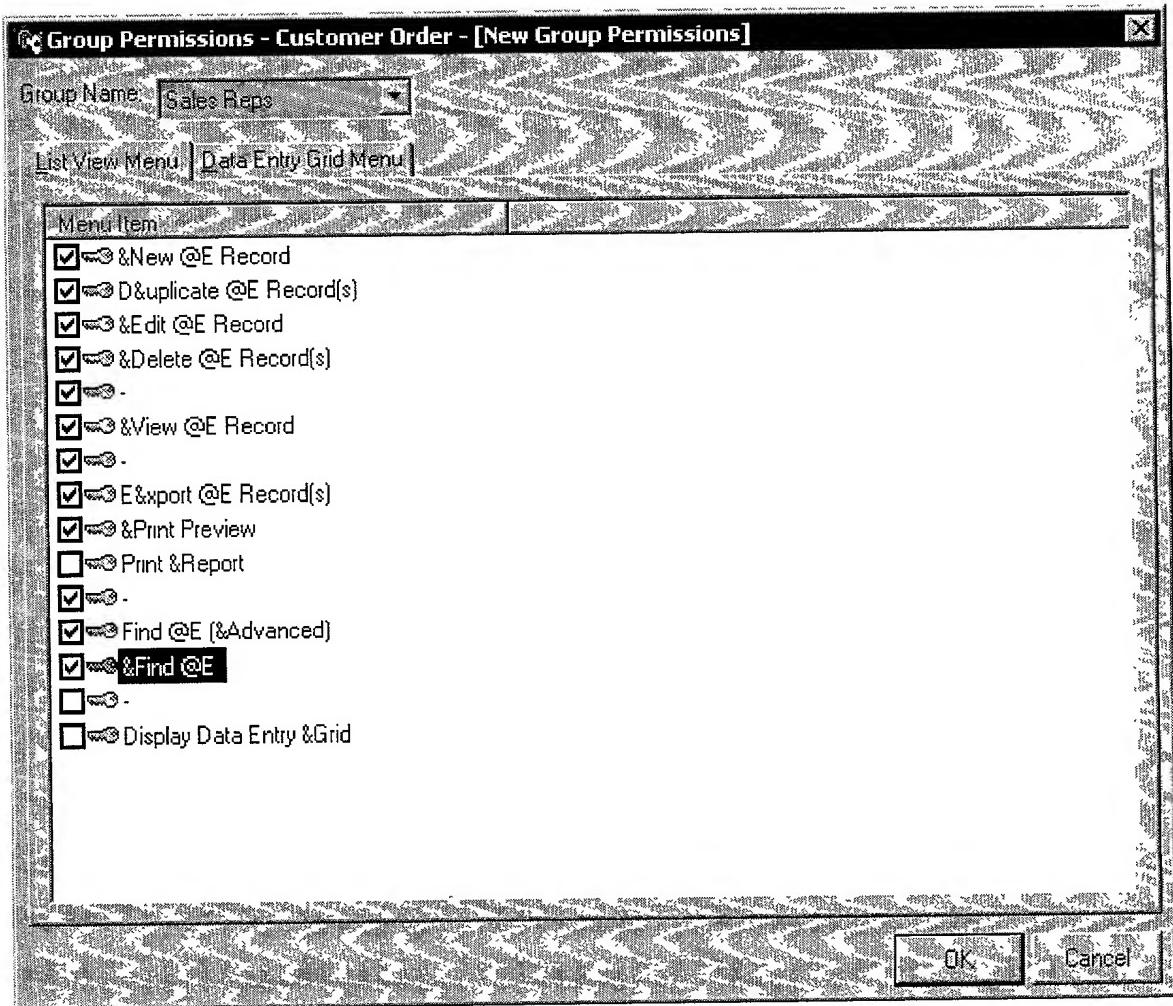


FIG. 69

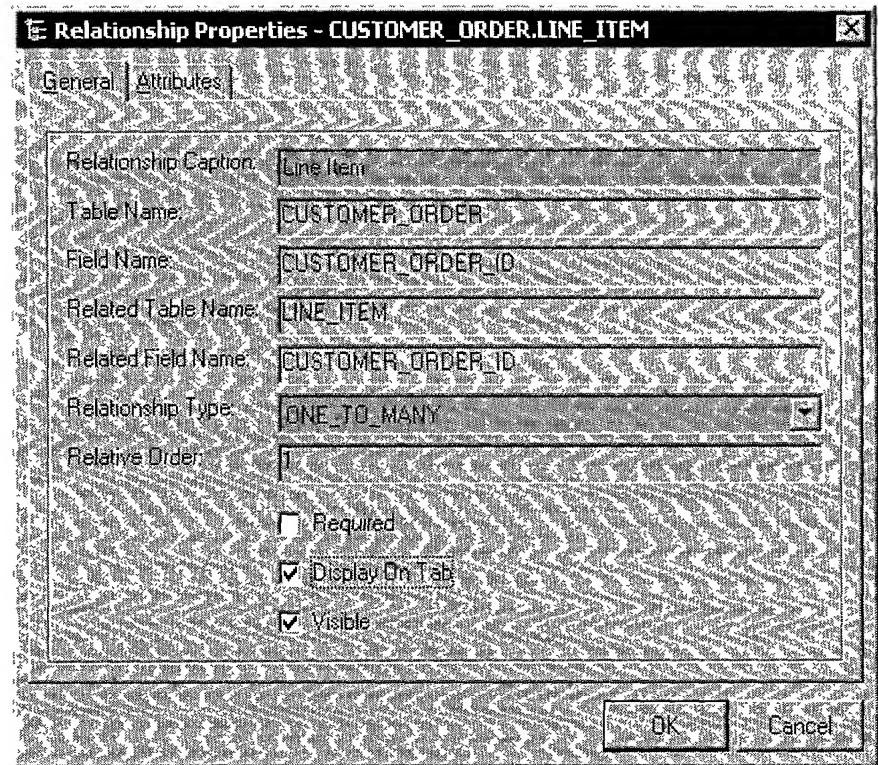


FIG. 70

FIG. 71

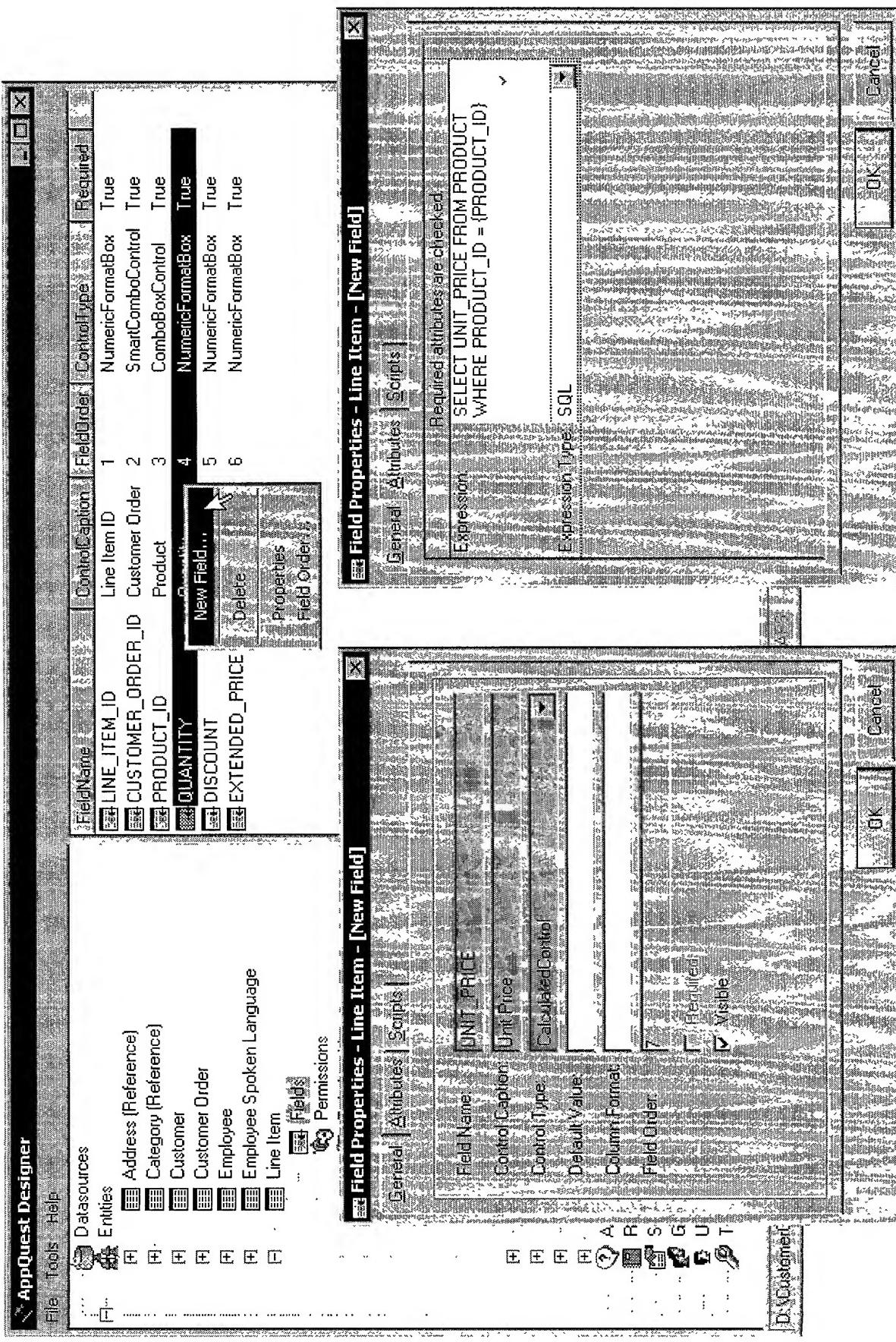
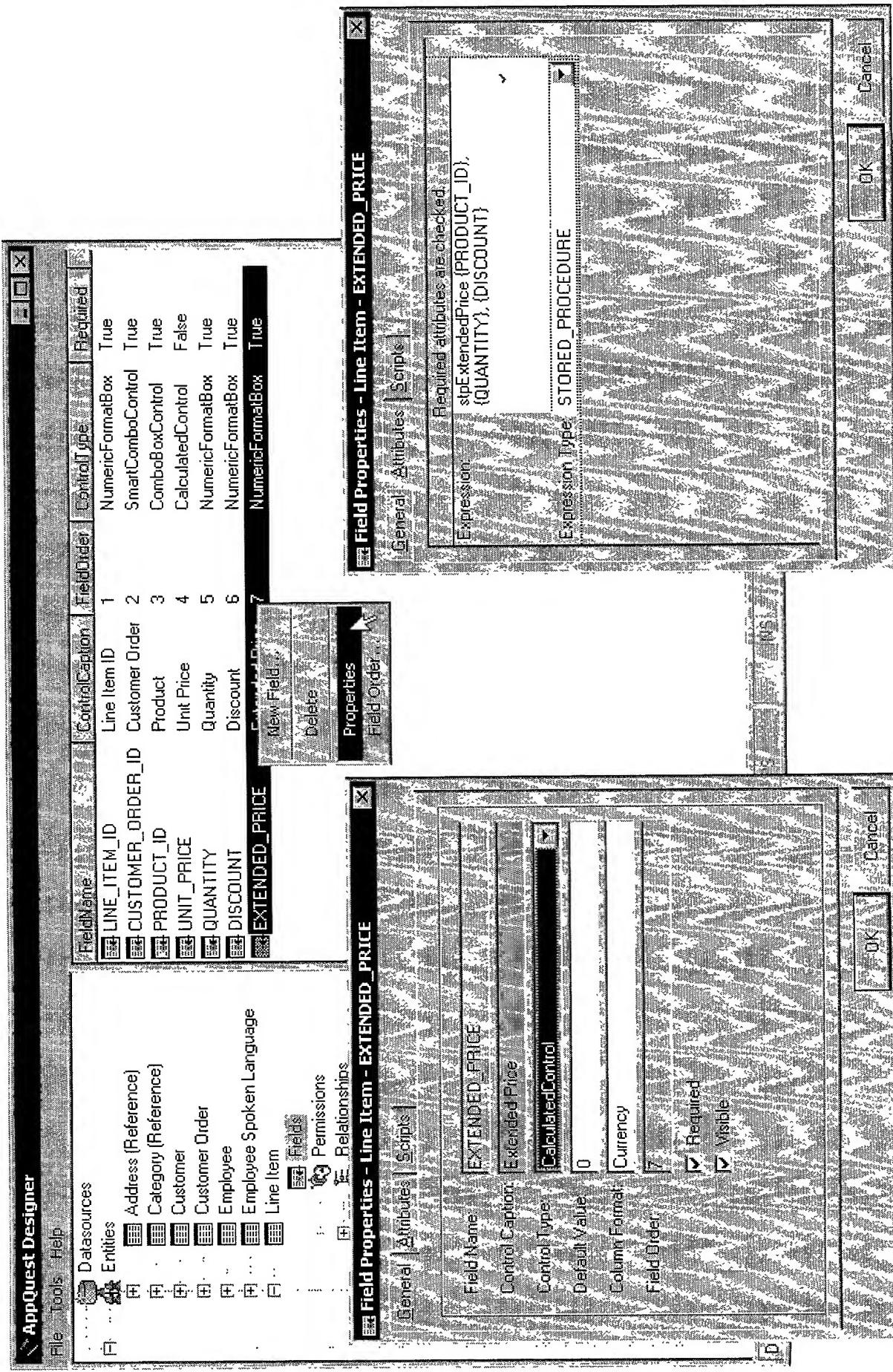


FIG. 72



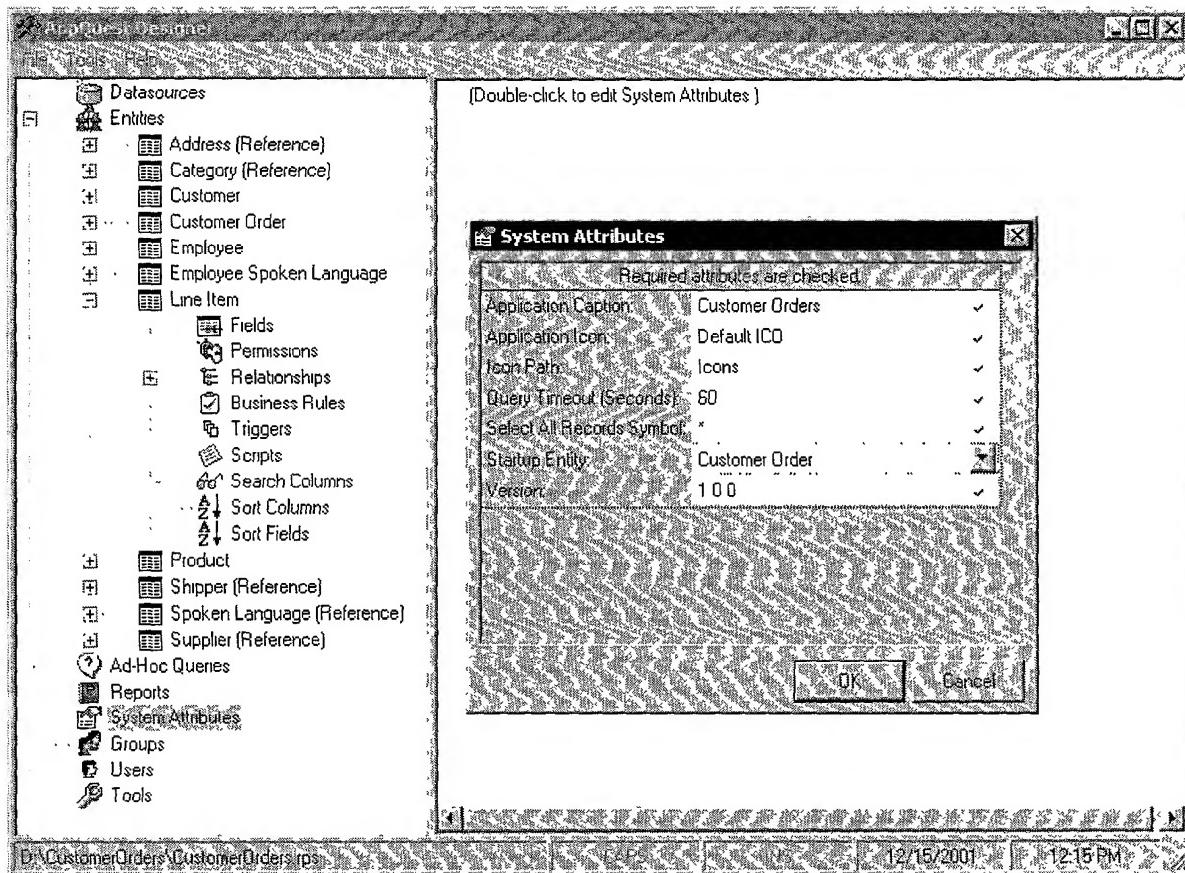


FIG. 73

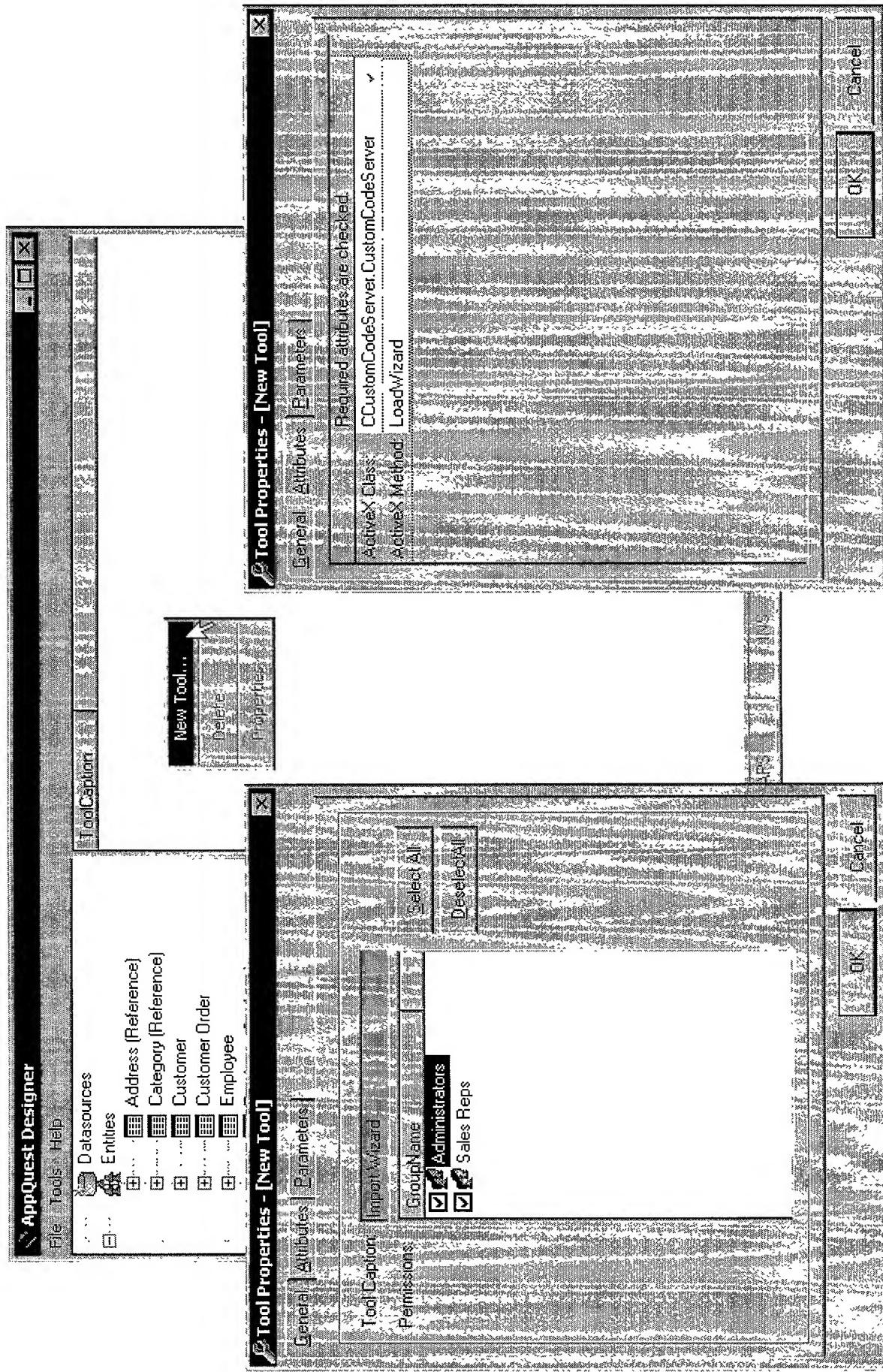


FIG. 74



FIG. 75

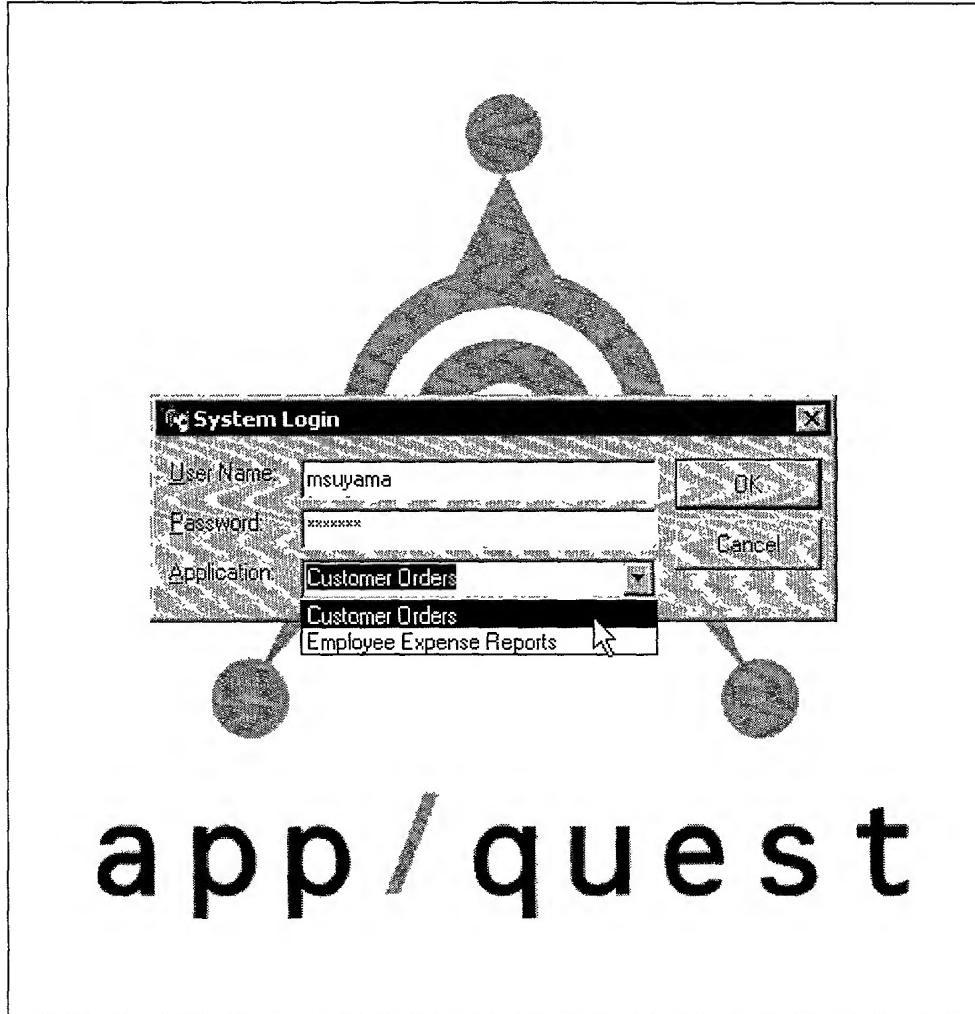


FIG. 76

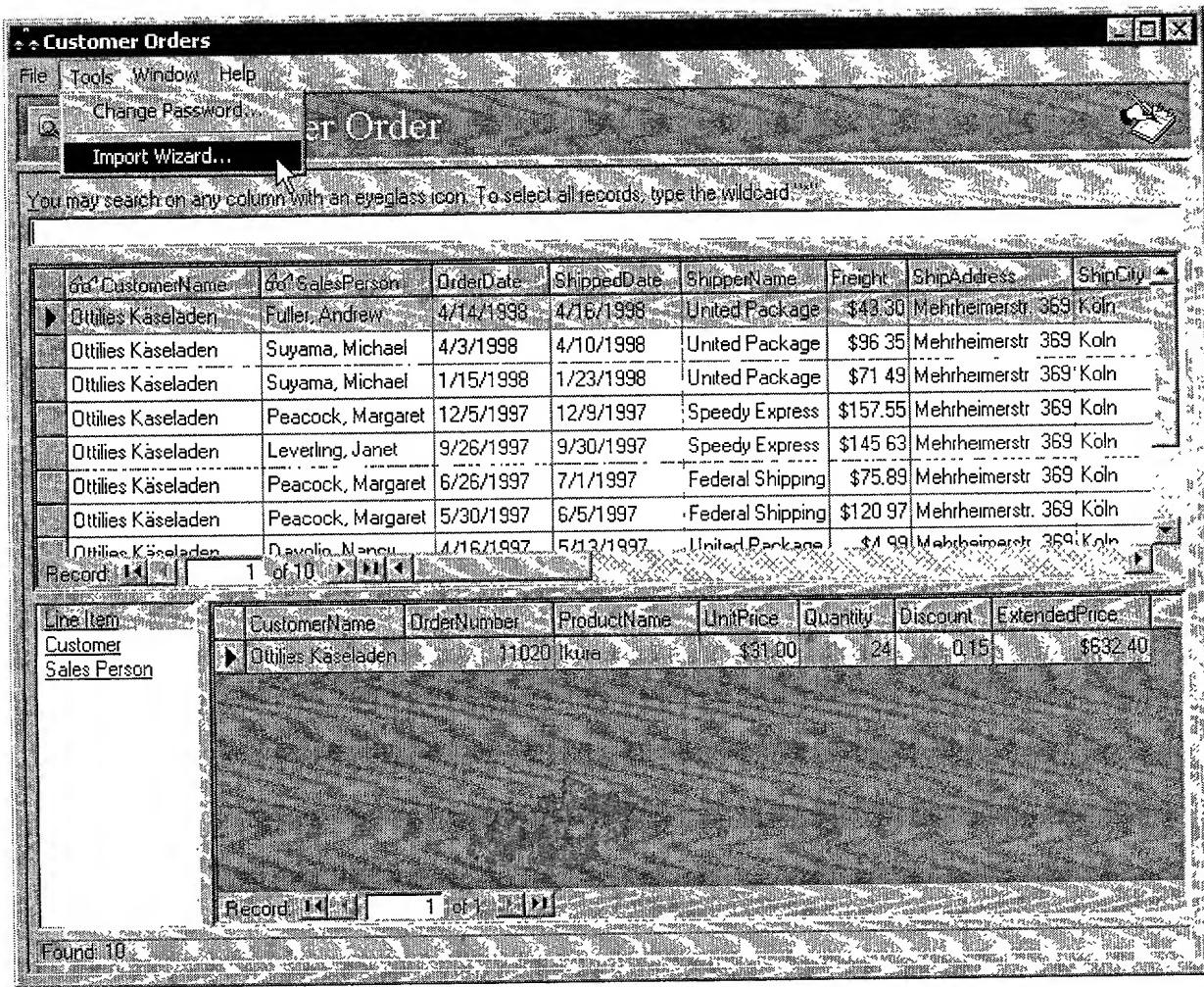


FIG. 77

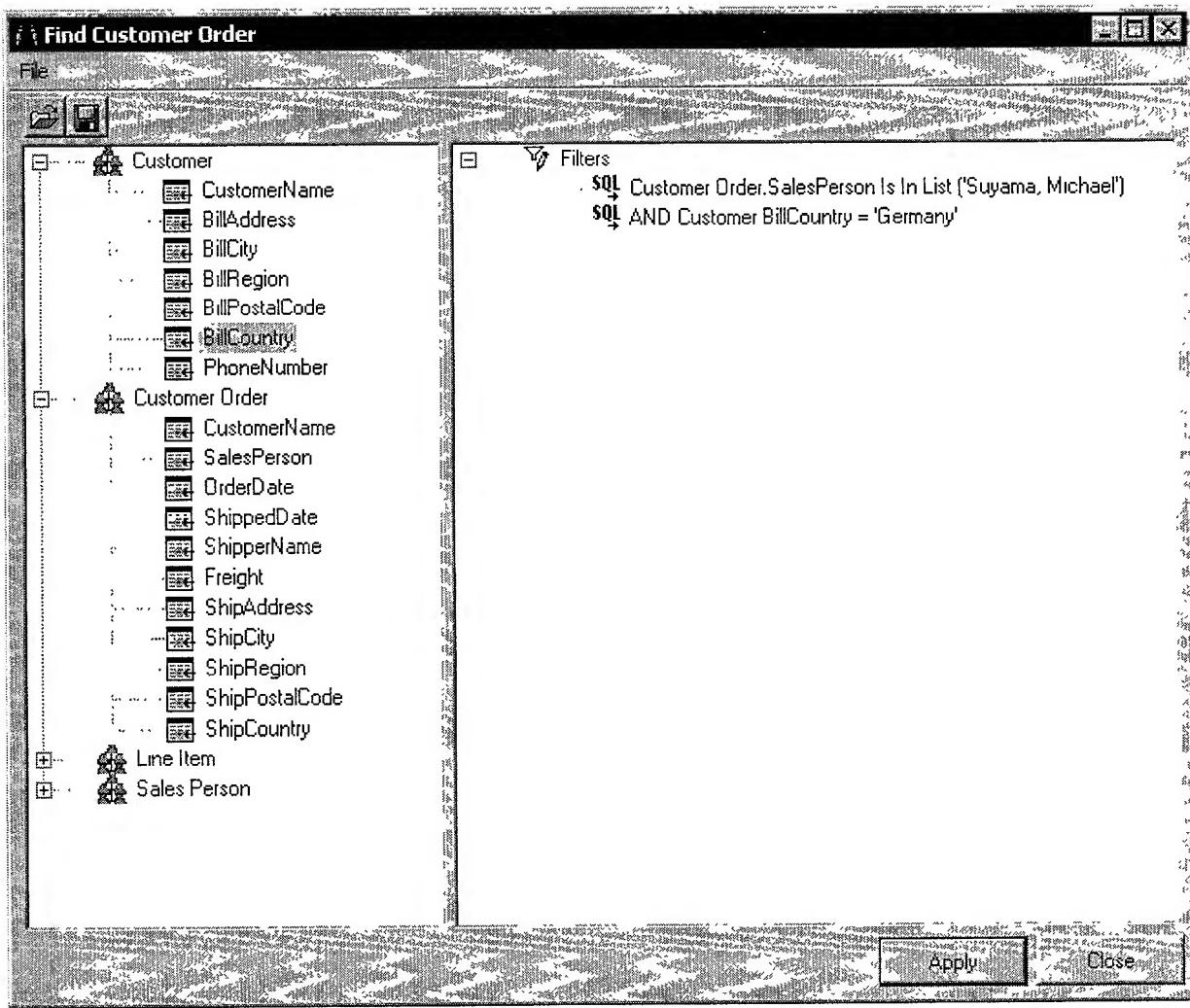


FIG. 78

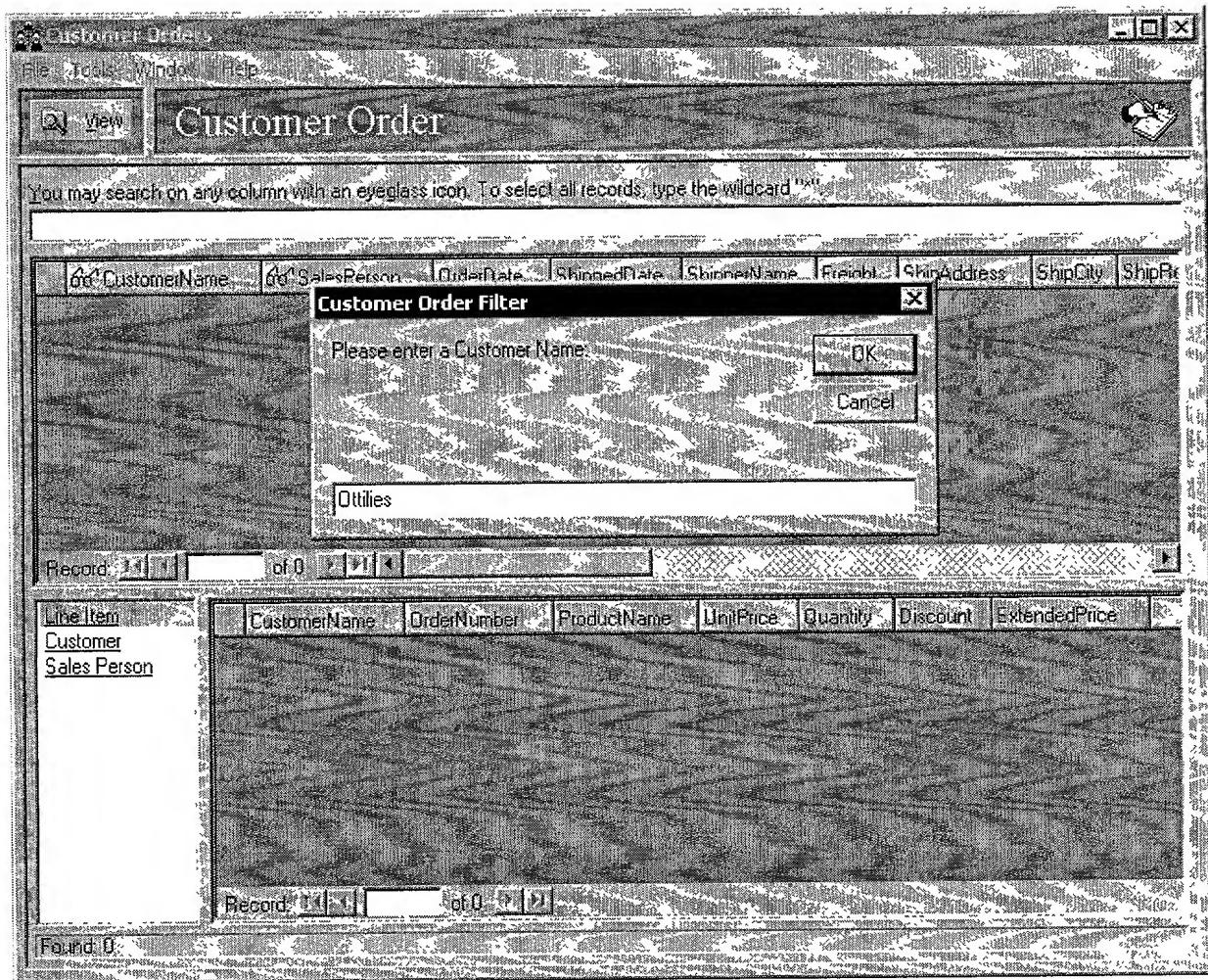


FIG. 79

FIG. 80

Customer Order Input - [New Record]

File Edit View General Line Item Related Info

Required fields are checked.

Customer Order ID:	New Record
Customer:	ACME Grocery
Sales Person:	Suyama, Michael
Order Date:	12/15/2001
Shipped Date:	
Shipper:	National Transport
Freight:	\$33.75
Ship Address:	

Address

File Edit View General Line Item Related Info

Enter your search criteria below. You may search on any field.
To select all records, type the wildcard: *

Address: Albuquerque

Find Clear

Address	City	Region	Postal Code	Country
2817 Milton Dr.	Albuquerque	NM	87110	USA
13015 Sandia Point NE	Albuquerque	NM	87111	Bernalillo
2810 Milton Dr.	Albuquerque	NM	87110	USA

Record 1 of 3 Record 3 of 3 Undo Redo

Customer Order Input - [New Record]

File Edit View General Line Item Related Info

Required fields are checked.

Customer Order ID:	New Record
Customer:	ACME Grocery
Sales Person:	Suyama, Michael
Order Date:	12/15/2001
Shipped Date:	
Shipper:	National Transport
Freight:	\$33.75
Ship Address:	Address: 2810 Milton Dr. City: Albuquerque Region: NM PostalCode: 87110 Country: USA

Record 1 of 3 Record 3 of 3 Undo Redo

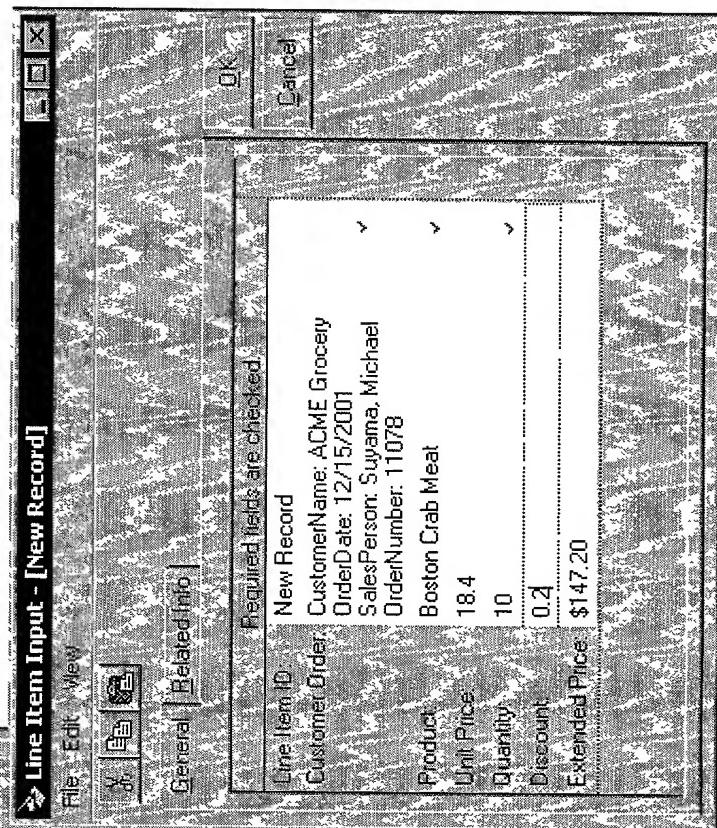
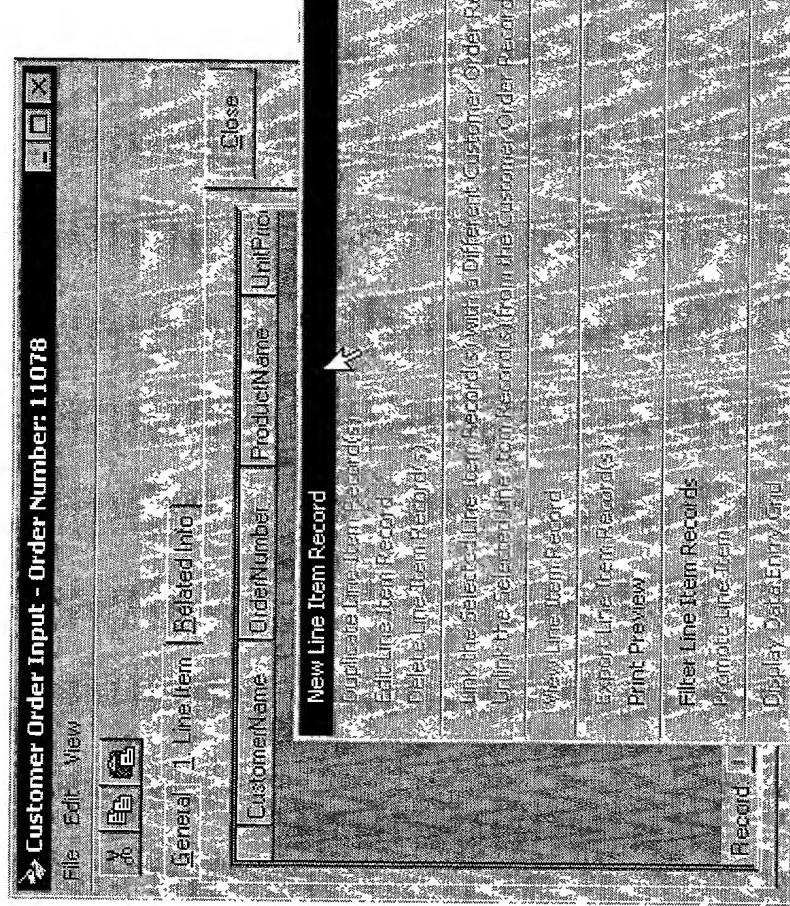


FIG. 81

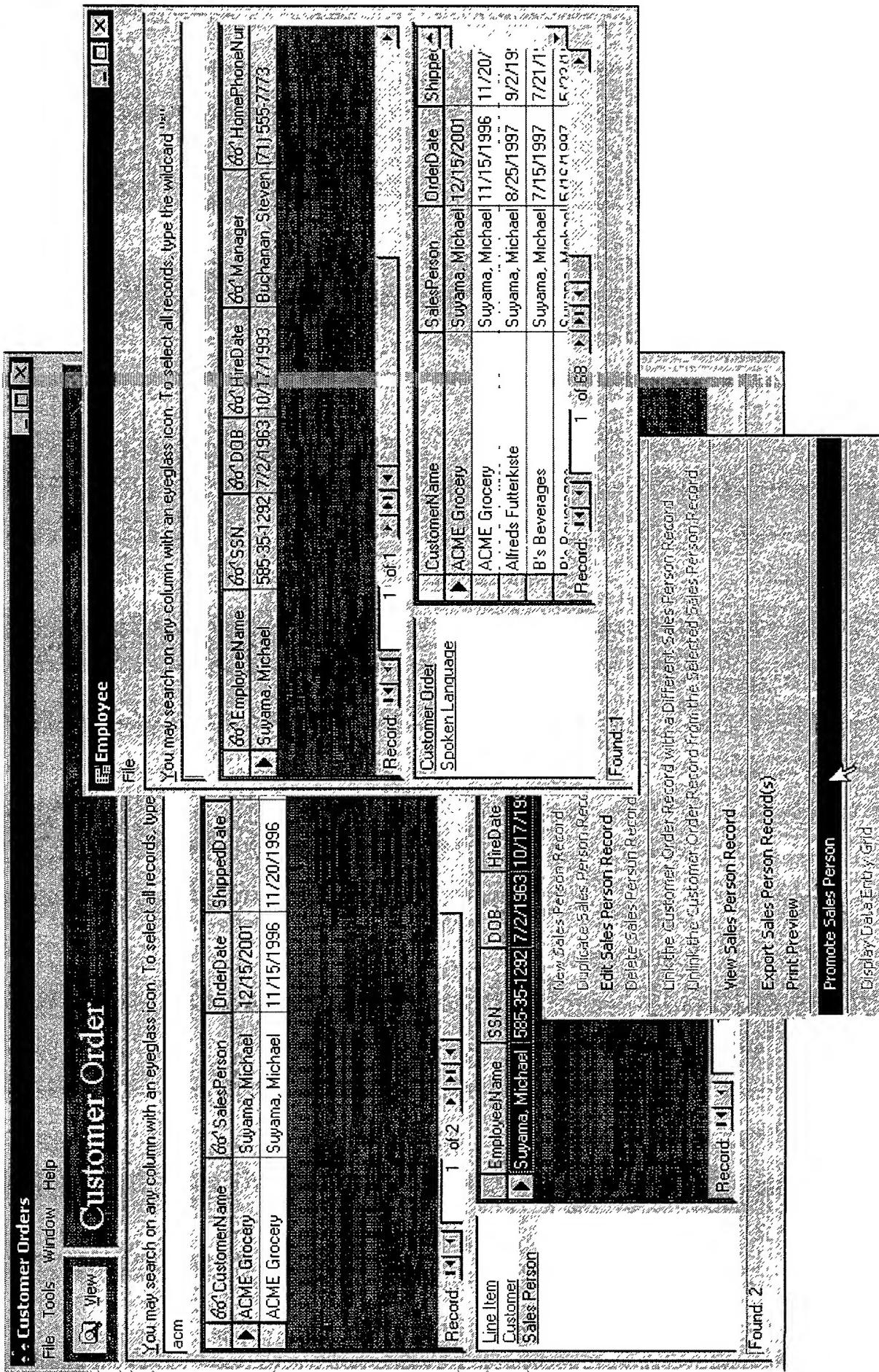


FIG. 82

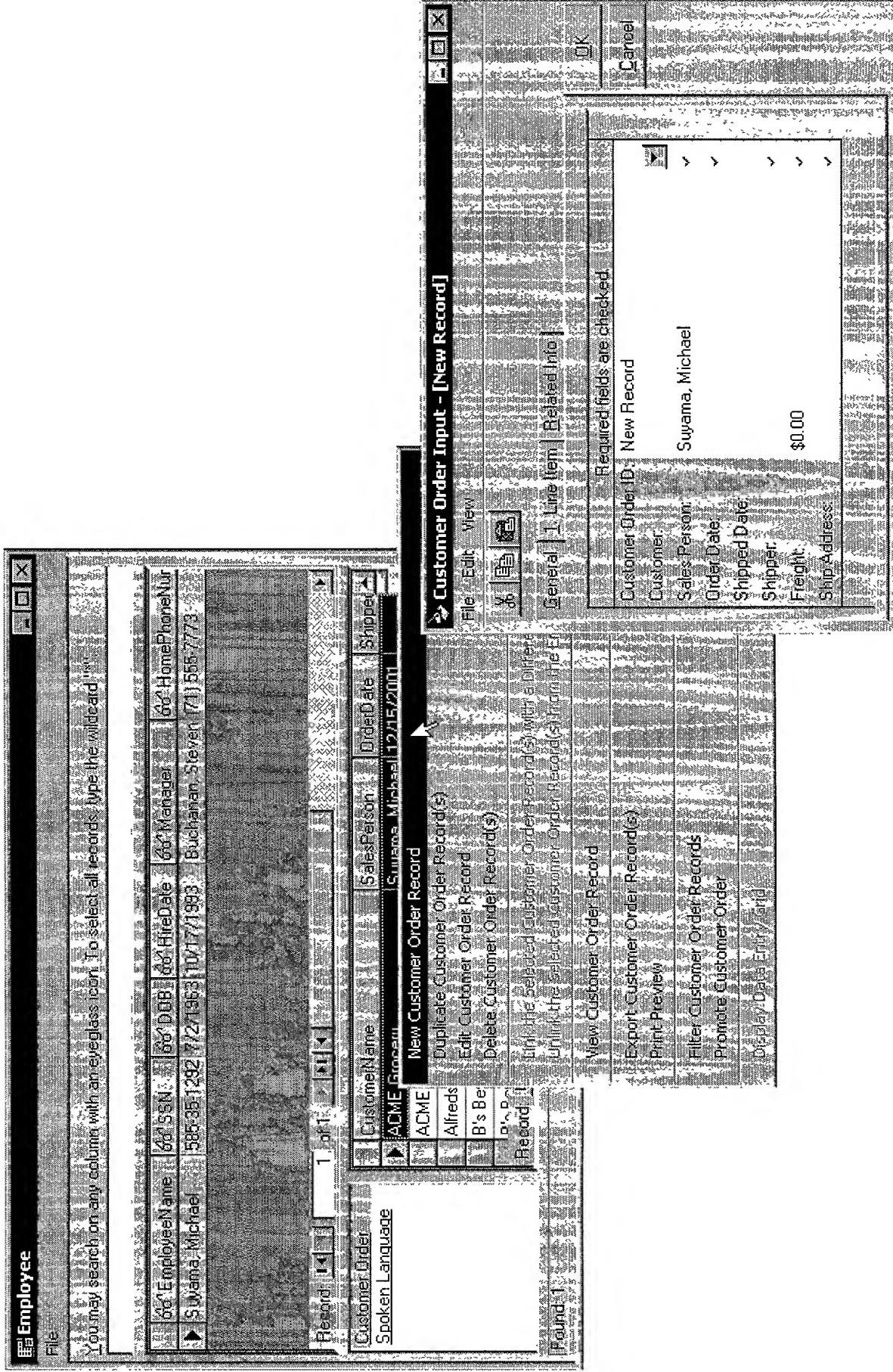


FIG. 83

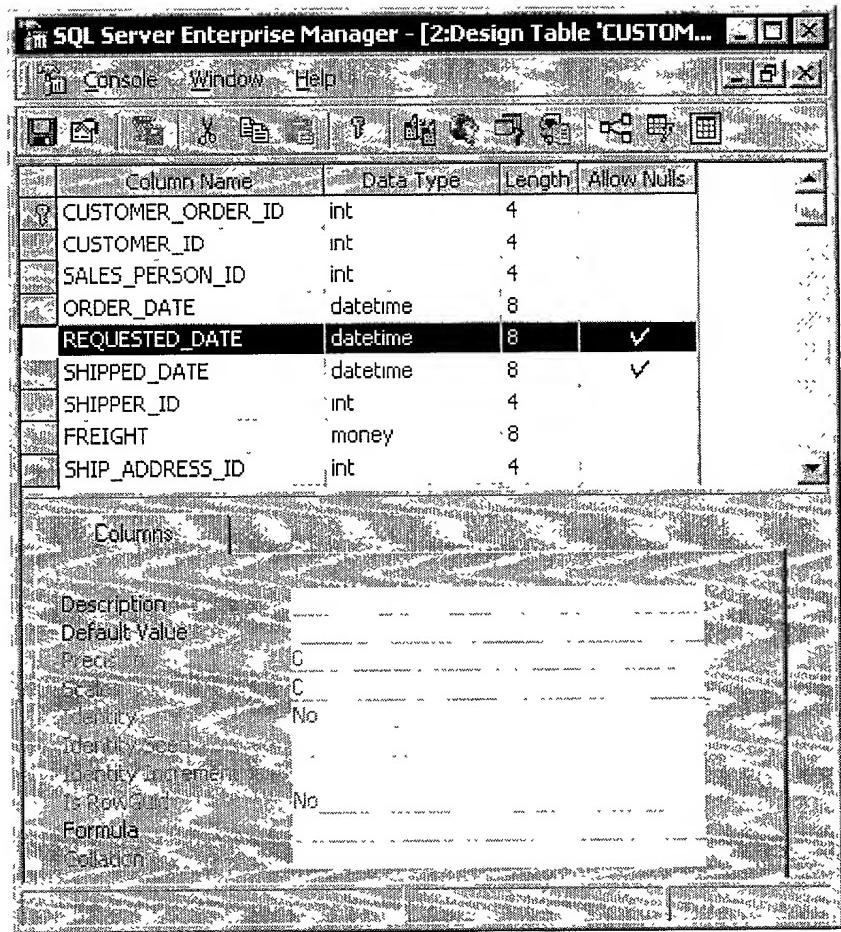


FIG. 84

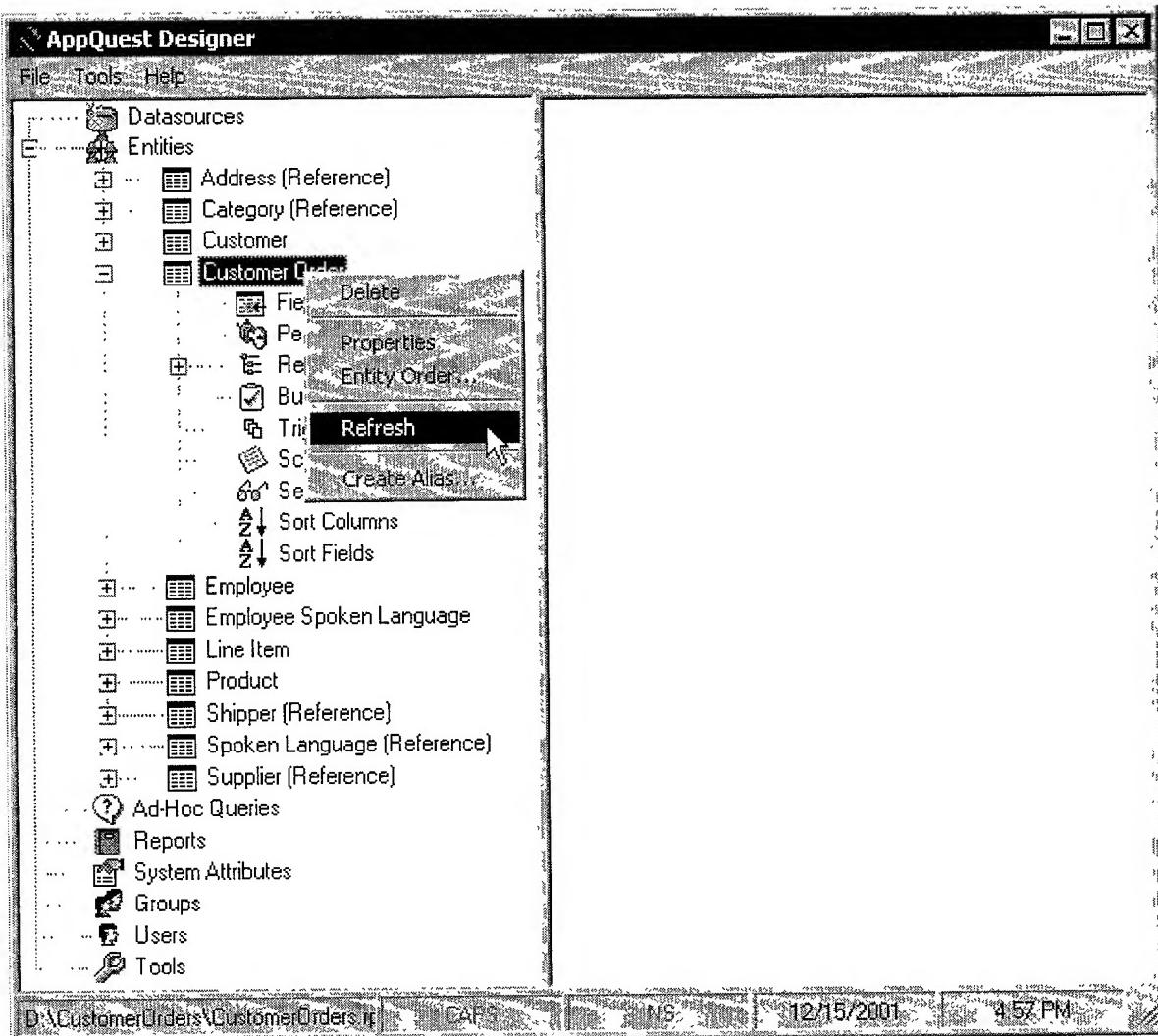


FIG. 85

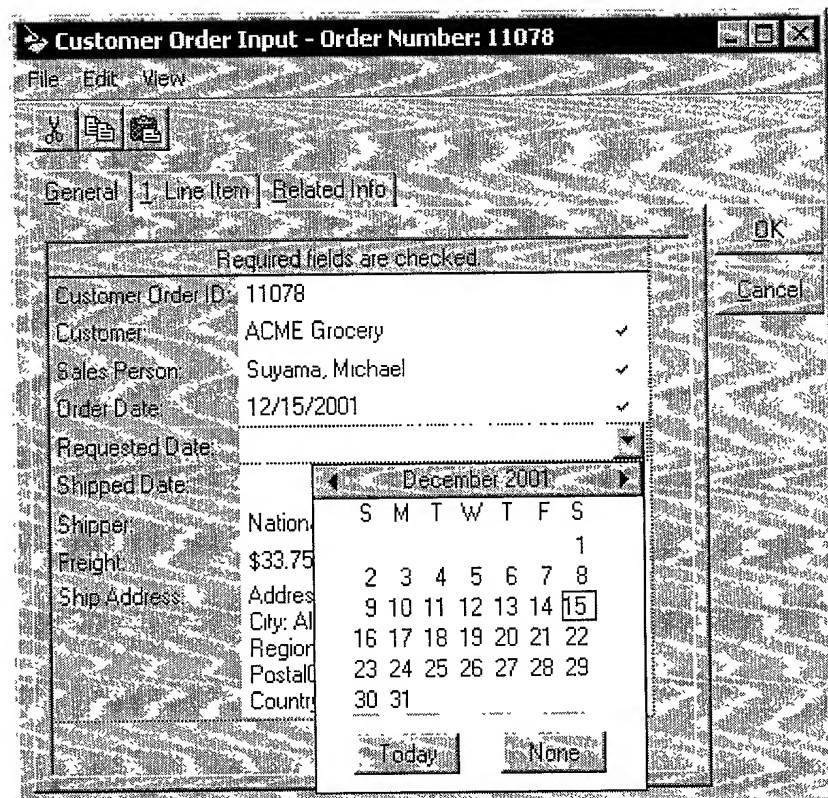


FIG. 86